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## SEARCH REQUEST FORM

## Scientific and Technical Information Center

Requester's Full Name: Jila Mohandes Examiner #: 8 Date: 10-22-03  
 Art Unit: 3728 Phone Number 305-7015 Serial Number: 091892186  
 Mail Box and Bldg/Room Location: 9B22 Results Format Preferred (circle): PAPER DISK E-MAIL ?

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.  
 Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Apparatus for Cleansing Hands

Inventors (please provide full names): Peter Sneiderker

Earliest Priority Filing Date: June 26, 2001

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

snack food in combination with Napkin or a towelette in  
 a food bag.  
 potato chips or nuts (oily food)

\*\*\*\*\*  
 STAFF USE ONLY

Searcher: Sherry Damon

Searcher Phone #: 305 8587

Searcher Location: CP2/2C08

Date Searcher Picked Up: 10/24/03 9am

Date Completed: 10/24/03 3:58

Searcher Prep & Review Time: 90 min

Clerical Prep Time: 12

Online Time: 126 min

## Type of Search

NA Sequence (#)

AA Sequence (#)

Structure (#)

Bibliographic

Litigation

Fulltext

Patent Family

Other

STN

Dialog

Questel/Orbit

Dr. Link

Lexis/Nexis

Sequence Systems

WWW/Internet

Other (specify)



# STIC Search Report

## EIC 3700

STIC Database Tracking Number: 106497

**TO: Jila Mohandes**  
**Location: cp2 9b22**  
**Art Unit: 3728**  
**Friday, October 24, 2003**

**Case Serial Number: 09/892186**

**From: Emory Damron**  
**Location: EIC 3700**  
**CP2-2C08**  
**Phone: 305-8587**

**Emory.Damron@uspto.gov**

### Search Notes

Dear Jila,

Please find below an inventor search in the bibliographic and full-text foreign patent files, as well as keyword searches in the patent and non-patent literature files, both bibliographic and full text. With my supervisor's permission, I also searched US Patent files.

References of potential pertinence have been color-tabbed. Please review the whole packet, however.

In the Bibliographic/NPL packet, set 35, item 33, I found a reference to the idea of placing Unilever 2000 Antibacterial wipes in popcorn bags in movie theatres. I Google-ed the Unilever site, but could not find any inhouse reference to this concept used by Screenvision Cinema Productions; the citation is from May of 2001.

I enclosed one US reference, 3,499,538 (Sherard), with relevant line and column citations.

Please contact me if I can refocus or expand any aspect of this case.

Sincerely,

Emory Damron  
Technical Information Specialist  
EIC 3700, US Patent & Trademark Office  
Phone: (703) 305-8587  
Fax: (703) 306-5915

Set	Items	Description
S1	175695	SNACK?() FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE() CURL? ?
S2	307697	POTATO() CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK) () RIN-D? ? OR POTATOCHIP?
S3	1162	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY) () FOO-D? ?
S4	31132	PC=20992
S5	7305606	SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA-CL? OR BOX OR BOXED OR BOXES
S6	296265	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-ANDY()WIPE? ? OR RAG OR RAGS
S7	971848	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -PAD OR PADS OR CLOTH OR CLOTHS
S8	355287	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE-R? ?
S9	819413	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-T? OR DRENCH?
S10	604534	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S11	123927	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S12	767462	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -HYGEN?
S13	98955	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S14	942637	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S15	569468	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S16	618631	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S17	8063760	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S18	3564006	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S19	448915	S1:S4
S20	23030	S19(5N)S5
S21	327	S20(S) (S6:S8)
S22	127	S21 AND (S14:S17)
S23	60	S22 AND S9:S13
S24	127	S22 OR S23
S25	107	S24 AND PY<2002
S26	90	RD (unique items)

?show files

File 9:Business & Industry(R) Jul/1994-2003/Oct 23  
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File 16:Gale Group PROMT(R) 1990-2003/Oct 23  
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File 148:Gale Group Trade & Industry DB 1976-2003/Oct 24  
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File 160:Gale Group PROMT(R) 1972-1989  
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File 235:AGROProjects 1990- 2003/Q4  
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File 621:Gale Group New Prod.Annou.(R) 1985-2003/Oct 24  
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File 635:Business Dateline(R) 1985-2003/Oct 24  
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File 80:TGG Aerospace/Def.Mkts(R) 1986-2003/Oct 23  
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File 570:Gale Group MARS(R) 1984-2003/Oct 24  
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File 636:Gale Group Newsletter DB(TM) 1987-2003/Oct 23  
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File 98:General Sci Abs/Full-Text 1984-2003/Sep

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File 47:Gale Group Magazine DB(TM) 1959-2003/Oct 23  
(c) 2003 The Gale group  
File 141:Readers Guide 1983-2003/Sep  
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File 149:TGG Health&Wellness DB(SM) 1976-2003/Sep W4  
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File 482:Newsweek 2000-2003/Oct 22  
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File 743:(New Jersey)The Record 1989-2003/Oct 23  
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(c) 2003 Philadelphia Newspapers Inc  
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(c) 2003 USA Today  
File 646:Consumer Reports 1982-2003/Oct  
(c) 2003 Consumer Union  
File 609:Bridge World Markets 2000-2001/Oct 01  
(c) 2001 Bridge  
File 649:Gale Group Newswire ASAP(TM) 2003/Oct 21  
(c) 2003 The Gale Group  
File 610:Business Wire 1999-2003/Oct 24  
(c) 2003 Business Wire.  
File 613:PR Newswire 1999-2003/Oct 24  
(c) 2003 PR Newswire Association Inc  
File 714:(Baltimore) The Sun 1990-2003/Oct 24  
(c) 2003 Baltimore Sun  
File 810:Business Wire 1986-1999/Feb 28  
(c) 1999 Business Wire  
File 813:PR Newswire 1987-1999/Apr 30  
(c) 1999 PR Newswire Association Inc

Set	Items	Description
S1	1870	SNACK?() FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE() CURL? ?
S2	17295	POTATO() CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK)() RIN-D? ? OR POTATOCHIP?
S3	40	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY)() FOO-D? ?
S4	0	PC=20992
S5	564169	SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA-CL? OR BOX OR BOXED OR BOXES
S6	0	PC=(2641? OR 3070001)
S7	20850	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-ANDY()WIPE? ? OR RAG OR RAGS
S8	211510	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -PAD OR PADS OR CLOTH OR CLOTHS
S9	26936	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING() MEMBE-R? ?
S10	185864	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-T? OR DRENCH?
S11	34770	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S12	103186	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S13	40697	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -HYGEN?
S14	33262	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S15	299463	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S16	230074	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S17	451330	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S18	853279	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S19	545328	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S20	890	S1:S3(10N)S5
S21	29	S20 AND (S7:S9)
S22	16	S21 AND (S15:S18)
S23	10	S21 AND (S10:S14 OR S19)
S24	29	S21 OR S22 OR S23
S25	21	S24 AND PY<2002
S26	21	IDPAT (sorted in duplicate/non-duplicate order)

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File 340:CLAIMS(R) /US Patent 1950-03/Oct 21

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File 342:Derwent Patents Citation Indx 1978-01/200345

(c) 2003 Thomson Derwent

26/3, TI/17 (Item 17 from file: 340)  
DIALOG(R) File 340: CLAIMS(R) / US Patent  
(c) 2003 IFI/CLAIMS(R). All rts. reserv.

Dialog Acc No: 1274448 IFI Acc No: 8012839

Document Type: C

**MICROWAVE POPCORN PACKAGE**

Inventors: BOREK JAMES R (US)

Assignee: PILLSBURY CO THE

Assignee Code: 65984

Publication (No, Date), Applic (No, Date):

US 4219573 19800826 US 7915036 19790226

Publication Kind: A

Calculated Expiration: 19990226

(Cited in 037 later patents)

Priority Applic(No, Date): US 7915036 19790226

**MICROWAVE POPCORN PACKAGE**

**Abstract:** A **package** for popping **popcorn** in a microwave oven is provided. The **package** includes an expandable **container** adapted to contain **popcorn**, oil and salt which when exposed to microwave radiation, the oil and popcorn will become heated and the **popcorn** will pop (steam produced by the heating will expand the **container** to accommodate the popped **popcorn**). The **container** has one wall with a thermal insulating **pad** associated therewith which improves the popping performance of the **popcorn** by preventing heat loss from the **package** to the oven floor.

26/3, TI/19 (Item 19 from file: 340)  
DIALOG(R) File 340: CLAIMS(R) /US Patent  
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Dialog Acc No: 1006590 IFI Acc No: 7609414

Document Type: C

PACKAGE FOR UNIFORMLY SHAPED CHIP SNACK FOOD PRODUCTS; NESTING,  
CYLINDERS, LOOPS

Inventors: MOLNAR NICHOLAS M (N/A)

Assignee: UNASSIGNED OR ASSIGNED TO INDIVIDUAL

Assignee Code: 68000

Publication (No, Date), Applic (No, Date):

US 3956510 19760511 US 74525535 19740123

Publication Kind: A

Calculated Expiration: 19930511

(Cited in 002 later patents)

Cont.-in-part Pub(No), Applic(No, Date): ABANDONED US

72242763 19720410

Priority Applic(No, Date): US 74525535 19740123; US 72242763 19720410

26/TI,AB/19 (Item 19 from file: 340)  
DIALOG(R)File 340:(c) 2003 IFI/CLAIMS(R). All rts. reserv.

PACKAGE FOR UNIFORMLY SHAPED CHIP SNACK FOOD PRODUCTS; NESTING,  
CYLINDERS, LOOPS

**Abstract:** Aqueous **antibacterial** compositions for use as surgical scrubs, antiseptic skin **cleansers** and hand lotions are prepared from a **combination** of (a) at least one halogenated salicylanilide, carbanilide or thiocarbanilide; (b) at least one halogenated diphenylhydroxy ether or bisphenol; and (c) a quaternary salt derived from an ethoxylated or propoxylated polyol. The compositions are of low toxicity and possess an extremely high order of activity against both Gram-positive and Gram-negative organisms.

Set	Items	Description
S1	5042	SNACK? () FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE() CURL? ?
S2	133856	POTATO()CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK) () RIN-D? ? OR POTATOCHIP?
S3	305	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY) () FOO-D? ?
S4	0	PC=20992
S5	1032591	SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA-CL? OR BOX OR BOXED OR BOXES
S6	0	PC=(2641? OR 3070001)
S7	67120	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-ANDY()WIPE? ? OR RAG OR RAGS
S8	554796	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -PAD OR PADS OR CLOTH OR CLOTHS
S9	66961	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE-R? ?
S10	727989	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-T? OR DRENCH?
S11	177680	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S12	328125	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S13	144801	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -HYGEN?
S14	68845	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S15	548314	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S16	627698	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S17	1152272	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S18	2427931	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S19	1266147	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S20	5425	S1:S3(10N)S5
S21	1342	S20 AND (S7:S9)
S22	1290	S21 AND (S15:S18)
S23	545	S22 AND S10:S14
S24	823	S21 AND (S15:S16)
S25	399	S24 AND S10:S14
S26	40329	S10:S14(5N) (S7:S9)
S27	45	S25 AND S26
S28	399	S25 AND (S23:S24)
S29	394	S28 AND (S17:S19)
S30	118550	S5(5N) (S15:S16)
S31	193	S29 AND S30
S32	169	S31 AND PY<2003
S33	39	S27 AND PY<2003
S34	183	S32 OR S33

?show files

File 652:US Patents Fulltext 1971-1975  
(c) format only 2002 The Dialog Corp.  
File 654:US Pat.Full. 1976-2003/Oct 21  
(c) Format only 2003 The Dialog Corp.

4136260

Derwent Accession: 1999-276641

**Utility****C/ Snack food dispensing utensil****; GRIPPER WITH FOOD ADHESION MEANS TO ATTRACT RESIDUE; CLEANER HANDS;****POPCORN**

Inventor: Keough, Alice Marisha, 15172 Afton Hills Dr., Afton, MN, 55001

Keough, Katherine Axia, 15172 Afton Hills Dr., Afton, MN, 55001

Keough, Steven Joseph, 15172 Afton Hills Dr., Afton, MN, 55001

Assignee: Unassigned

Unassigned Or Assigned To Individual (Code: 68000)

Examiner: Pratt, Helen (Art Unit: 171)

Law Firm: Patterson &amp; Keough, P.A.

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 5895673	A	19990420	US 96739807	19961030

Fulltext Word Count: 3116

**Abstract:**

A food utensil which is useful for picking up and delivering food to a mouth of a consumer comprises a gripping portion and a food adhering portion. The gripping portions allows a consumer to hold the utensil. The food-adhering portion adheres food thereto and provides enough surface adhesion to attract and nominally retain food having a residue which would otherwise be deposited onto the consumer's hands.

3559551

Derwent Accession: 1995-021331

**Utility****M/ Apparatus and method for securing a detachable promotional banner or coupon to a flexible package**

Inventor: Callahan, Stephen, Lewisville, TX

Holten, Stephen, Carrollton, TX

Reaves, Jerry, Midlothian, TX

Assignee: Recot, Inc. (02), Plano, TX

Recot Inc (Code: 28721)

Examiner: Sipos, John (Art Unit: 321)

Assistant Examiner: Moon, Daniel

Law Firm: Rothwell, Figg, Ernst &amp; Kurz

	Publication Number	Kind	Date	Application Number	Filing Date
Main Patent	US 5369936	A	19941206	US 92848173	19920310

Fulltext Word Count: 3837

**Abstract:**

Apparatus and methods for producing a **flexible** package having a banner or coupon adhered thereto attach a continuous banner stock to a continuous web of packaging film. The united web is processed through a form, fill and seal apparatus wherein the web is fed to a vertical form-fill tube, formed into a tubular **package** preform, and **sealed** as the preform exits the tube.

Set	Items	Description
S1	46	AU=SNEDEKER
S2	11624	SNACK?() FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE() CURL? ?
S3	233903	POTATO() CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK) () RIN-D? ? OR POTATOCHIP?
S4	511	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY) () FOOD? ?
S5	2	S1 AND (S2:S4)
S6	1	S5 AND PY<2002
S7	2	S5 OR S6
S8	2	IDPAT (sorted in duplicate/non-duplicate order)

?show files

File 347:JAPIO Oct 1976-2003/Jun(Updated 031006)  
(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200368  
(c) 2003 Thomson Derwent

File 371:French Patents 1961-2002/BOPI 200209  
(c) 2002 INPI. All rts. reserv.

File 344:Chinese Patents Abs Aug 1985-2003/Apr  
(c) 2003 European Patent Office

File 348:EUROPEAN PATENTS 1978-2003/Oct W03  
(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20031016,UT=20031009  
(c) 2003 WIPO/Univentio

File 340:CLAIMS(R)/US Patent 1950-03/Oct 21  
(c) 2003 IFI/CLAIMS(R)

File 342:Derwent Patents Citation Indx 1978-01/200345  
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File 652:US Patents Fulltext 1971-1975  
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File 654:US Pat.Full. 1976-2003/Oct 21  
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8/5,K/1 (Item 1 from file: 652)  
DIALOG(R) File 652:US Patents Fulltext  
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00709672

Utility

SELF-REGULATING THERMAL PROTECTION SYSTEM FOR HEATED SURFACES

PATENT NO.: 3,831,396

ISSUED: August 27, 1974 ( 19740827)

EXTRA INFO: Assignment transaction [Reassigned], recorded November 10, 1986 (19861110)

INVENTOR(s): Donaldson, Coleman Dup., Princeton, NJ (New Jersey), US (United States of America)  
Snedeker, Richard S., Cransbury, NJ (New Jersey), US (United States of America)

ASSIGNEE(s): Aeronautical Research Associates of Princeton, Incorporated, (A U.S. Company or Corporation), Princeton, NJ (New Jersey), US (United States of America)

#### POST ISSUANCE ASSIGNMENTS

ASSIGNEE(s): TITAN SYSTEMS, INC., NEW JERSEY A CA. CORP.

Assignor(s): AERONAUTICAL RESEARCH ASSOCIATES OF PRINCETON, INC., A NJ. CORP.-- signed: 04/15/1986

Recorded: November 10, 1986 (19861110)

Reel/Frame: 004634/0353

Brief: ASSIGNMENT OF ASSIGNORS INTEREST.

Rep.: GIBSON, DUNN & CRUTCHER 1050 CONNECTICUT AVENUE, N.W. WASHINGTON, D.C. 20036

APPL. NO.: 5-275,059

FILED: July 25, 1972 (19720725)

#### CROSS-REFERENCE TO RELATED APPLICATIONS

This is a continuation-in-part of applicant's prior co-pending application, Ser. No. 173,151, filed Aug. 19, 1971 and now abandoned.

U.S. CLASS: 62-467 cross ref: 60-265; 62-51.1; 62-190; 165-299; 976-DIG.188

INTL CLASS: [ ] F25b 19-00

FIELD OF SEARCH: 165-32; 165-39; 62-467; 62-514; 62-190; 60-265; 102-105

#### References Cited

##### U.S. PATENT DOCUMENTS

1,459,318	6/1923	Birdsall	165-32
2,468,820	5/1949	Goddard	102-105
2,941,759	6/1960	Rice et al.	62-467
3,210,929	10/1965	Thomanek	60-265

PRIMARY EXAMINER: Davis, Jr., Albert W.

ATTORNEY, AGENT, OR FIRM: Brooks Haidt & Haffner

CLAIMS: 35

DRAWING PAGES: 13

DRAWING FIGURES: 60

ART UNIT: 342

#### ABSTRACT

A system for providing protective cooling for machine surfaces which, in the absence of such cooling, would otherwise be damaged on exposure to a high heat flux, and in which such cooling is initiated and regulated by the surface itself through its novel construction and the behavior of the materials of which it is made. This cooling action is achieved through the use of surface materials having different thermal expansion characteristics

which are arranged is such a way that the exposure to a high heat flux on one side of the surface causes the release through the surface of a coolant fluid contained under pressure on the other side.

What is claimed is:

1. A self-regulating thermal protection system for a surface exposed to heat comprising: means for supplying a coolant under pressure to a chamber located inwardly of the surface; a plurality of interfitted surface members having mutually different thermal expansion characteristics, said surface members being so interfitted as to constitute a tightly sealed outer surface at uniform low temperatures and, upon heating, to deform, said chamber communicating with said surface members, thereby opening a plurality of passages from said chamber to said outer surface for flow of said coolant to said outer surface.

2. A system according to claim 1, wherein said surface members are normally flat bimetallic elements, which bimetallic elements bend upon heating to open said passages.

3. A system according to claim 1, wherein said surface members are normally flat bimetallic elements stacked back to back with similar metals of adjacent bimetallic elements facing each other, said bimetallic elements bending upon heating to open said passages, said passages being formed between adjacent elements of said stack of bimetallic elements.

4. A system according to claim 3 wherein said bimetallic elements are in the form of disks, a central opening through the stacked disks defining said chamber, and said coolant supplying means being located within said central opening.

5. A system according to claim 3 wherein said elements are in the form of disks, each disk having a central opening in registry with central openings of the other disks, and apertures in said disks constituting said passages upon heating.

6. A system according to claim 1 wherein said surface members are normally rectangular bimetallic strips arranged with strip faces of largest area in contact, said strips being arranged back to back with faces of similar metal in contact, and each strip bending away from adjacent strips upon heating to open said passages.

7. A system according to claim 6, each of said strips having a plurality of spaced notches constituting portions of said passages upon heating.

8. A system according to claim 1, including means permitting limited overall expansion of the outer surface.

9. A system according to claim 1 including means restraining the outer surface against excessive overall expansion.

10. A system according to claim 1 including means for maintaining said surface members in their interfitted relationships.

11. A system according to claim 1 and including a sheet-like element having a plurality of apertures therethrough, said interfitted members including a plurality of flexible elements attached to said sheet-like element, said flexible elements tightly closing said apertures at low temperatures and said flexible elements bending upon heating to uncover said apertures and thus open said passages.

12. A system according to claim 11 wherein said flexible elements are generally rectangular bimetallic plates with faces of metal having a relatively high coefficient of thermal expansion facing said sheet-like element and faces of material having a relatively low coefficient of thermal expansion facing away from said sheet-like element.

13. A system according to claim 11 wherein said sheet-like element has a plurality of spaced grooves formed therein, a strip of material having a relatively higher coefficient of thermal expansion than that of said

sheet-like element being disposed in each of said grooves, said grooves communicating with said apertures, and said strips and portions of an outer face of said sheet-like element constituting said outer surface.

14. A system according to claim 1 including a sheet-like element having a plurality of holes therethrough, a plug positioned in each hole and sealingly closing the hole at low temperatures, said plugs being of a material having a lower coefficient of thermal expansion than that of said sheet-like element, whereby upon heating, the holes become larger than the plugs and open said passages.

15. A system according to claim 14 including means for maintaining said plugs centrally located with respect to said holes.

16. A system according to claim 1 wherein said interfitted members include a first set of step-shaped elements having a relatively low coefficient of thermal expansion and a second set of step-shaped elements having a relatively high coefficient of thermal expansion, the elements of said second set being tightly seated against the elements of said first set at low temperatures, and upon heating, the elements of said second set expanding away from the elements of said first set for opening said passages.

17. A system according to claim 1 wherein said interfitted surface members are alternating strips of materials having different thermal expansion characteristics, outer edges of said alternating strips forming a smooth outer surface at uniform low temperatures, each of said strips being secured at spaced substantially point locations to an adjacent strip having different thermal characteristics so that relatively greater thermal expansion of those ones of said alternating strips having a higher coefficient of thermal expansion opens said passages to said outer surface.

18. A system according to claim 1 wherein said surface members include bimetallic plates having at least one hole therethrough, and including an inner member having at least one aperture therethrough, each said hole being aligned with a corresponding aperture and constituting therewith a part of one of said passages, valve means in another part of each passage normally closing said passage against flow from said chamber to said outer surface, said bimetallic plates being mounted to bend upon heating and means coupling said plates with corresponding valve means to open said passages when said plates bend beyond a limited extent.

19. The system according to claim 18 wherein the means coupling the plates with the valve means provides a mechanical advantage whereby a relatively small bending of a plate produces greater corresponding motion of said valve means.

20. The system of claim 18 wherein said bimetallic plates are mounted to bend inwardly toward said inner member upon heating.

21. A system according to claim 20 wherein there are a plurality of holes in each bimetallic plate.

22. A system according to claim 18 wherein each said bimetallic plate is in the form of a disk, and including means securing the circumferential portion of the disk against outward movement, so that upon heating the central portion of the disk moves outwardly to open a passage.

23. The system according to claim 22 wherein each disk has a single central hole therethrough.

24. The system according to claim 22 wherein each disk has a plurality of spaced holes therethrough, the means coupling the disk with said valve means comprising a rod secured at the center of the disk.

25. The system according to claim 1 wherein said surface members include bimetallic disks mounted for outward movement of the central areas of said disks upon heating, peripheral portions of said disks blocking said

passages at uniform low temperatures, said peripheral portions moving to open said passages upon heating.

26. The system of claim 25 wherein an inner surface of each said disk has concentric grooves therein.

27. The system of claim 25 wherein said peripheral portions are separated by arcuately spaced cut out areas.

28. The system according to claim 1 wherein said surface members include tubular members, each said tubular member having a concentrically mounted rod therein, said rods and tubular members having mutually different thermal expansion characteristics, a portion of each said rod blocking a passage through its surrounding tubular member at uniform low temperatures, said tubular members deforming upon heating to open said passages.

29. The system of claim 1 wherein said outer surface is generally flat and smooth at uniform low temperatures.

30. The system of claim 1 wherein said outer surface is curved.

31. The system of claim 1 wherein said outer surface is generally conical.

32. In a projectile having an outer casing exposed to high heat flux, a self-regulating thermal protection system comprising: an assembly of surface elements having portions of materials of mutually different thermal expansion characteristics, said surface elements forming, at low temperatures, an outer skin of the casing; means for supplying a coolant under pressure to a chamber within said casing, said chamber communicating with said surface elements, said surface elements separating from each other upon heating because of their differing thermal expansion characteristics to open passages for said coolant, whereby the coolant flows outward to cool said outer skin.

33. In a projectile according to claim 32, said surface elements comprising bimetallic members mounted for relative displacement upon heating.

34. In a projectile according to claim 32, said surface elements comprising a stack of bimetallic disks, each disk having a central opening in registry with central openings of the other disks, and apertures in said disks constituting said passages upon heating.

35. In a projectile according to claim 32, said surface elements separating from each other only at areas of the casing where heating exceeds a predetermined amount, whereby cooling only occurs at such areas.

PATENT NO.: 3,831,396

ISSUED: August 27, 1974 ( 19740827)

... are free to slide on tube 5 which is threaded at both ends to accommodate nuts 6 and 7. The axial force required to pack the disks 2 is provided by tightening the nuts 6 and 7 against washers 8 and 9 which compress springs 10 and 11, thus...fast (e.g., welded) to the tube 5 or kept from sliding by tightening the nuts 6 and 7. In FIG. 12, a partial cross-section is shown of the assembly...

8/5,K/2 (Item 2 from file: 654)

DIALOG(R) File 654:US Pat.Full.

(c) Format only 2003 The Dialog Corp. All rts. reserv.

0004962859 \*\*IMAGE Available  
Derwent Accession: 2002-216045

**Apparatus for cleansing hands**

Inventor: Peter Snedeker, INV  
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	Publication Number	Kind	Date	Application Number	Filing Date
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Provisional				US 60-217908	20000713

US Classification on document (Main): 206233000 (X-ref): 206494000;  
206210000

International Classification (Edition 07): B65D-073/00

Secondary: B65D-081/24

Fulltext Word Count: 4673

Number of Claims: 1

Exemplary or Independent Claim Number(s): 1

Number of Drawing Sheets: 9

Number of Figures: 10

**Abstract:**

A cleaning member, specifically a pad or cloth which is preferably saturated with a wet cleansing solution and is retained within a sealed enclosure and attached to, embedded in or in some way captured by a food holding means to facilitate cleansing during and after consuming of said food.

**What is claimed is:**

Exemplary or Independent Claim(s):

1. An apparatus for cleansing hands comprising: (a) A cleaning member such as a pad or cloth. (b) said cleaning member is preferably saturated with a wet cleansing solution, (c) said cleaning member is retained within a sealed enclosure, (d) said cleaning member is attached to, embedded in or in some way captured by a food holding means, (e) said cleaning member is accessible to the consumer during and/or after the consuming of said food.

**Summary of the Invention:**

0004] When eating **snack food**, or other food normally sold in a bag or other container to facilitate transport thereof...

...consumer is often located remotely from conventional washing stations. Many of these foods such as **potato chips** and **nuts** tend to be very greasy or oily and the consumer's fingers, and possibly hands...0007] Many of those **snack foods** which are sold in bags, or other transportable containers, are made with oil or grease...in removing residue such as oil or grease from a consumer's hands after eating **snack food** or other food normally sold in a bag or other containers is beyond their effective...

...0011] (a) **Snack food** or other food normally sold in a bag or other container is packaged at a...food holding means. Thus, such a cleaning member can be incorporated within a package of **snack food** or other food at minimal cost and encumbrance...is attachable in some manner with respect to a food holding means wherein use with **snack food** holding means is particularly advantageous...

**Description of the Invention:**

...of the present invention wherein the food holding means comprises a bag containing foods including **snack foods** with the cleansing pad positioned within a sealed enclosure attached to the external surface of ...

...of the present invention wherein the food holding means comprises a bag containing foods including **snack foods** with the cleaning pad positioned within a sealed enclosure is inserted within said bag, and 0067] When eating **snack food** or other food normally sold in a bag or other container to facilitate transport thereof...

...consumer is often located remotely from conventional washing stations. Many of these foods such as **potato chips** and **nuts** tend to be very greasy or oily and the consumer's fingers and possibly hands...0069] Many **snack foods** sold in bags, or other transportable containers, are made with oil or grease materials which...provides a means for allowing a person to clean their hands after consuming of a **snack food** when positioned at a remote location with respect to conventional washing apparatus such as restrooms...  
...0072] It is common that **snack foods** are sold in bags, boxes or other containers or food holding means to allow them...

...grease impervious liners to prevent the oil and grease which is commonly found in such **snack foods** from penetrating the container and soiling the surrounding environment including a user's hands or...means which contain food products which tend to be oily and greasy such as the **snack foods potato chips** and shelled **nuts** .

[...in removing residue such as oil or grease from a consumer's hands after eating **snack food** or other food normally sold in a bag or other containers is beyond their effective...

...0079] (a) **Snack food** or other food normally sold in a bag or other container is packaged at a...

Set	Items	Description
S1	2608	SNACK?()FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE()CURL? ?
S2	42698	POTATO()CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK)()RIND? ? OR POTATOCHIP?
S3	215	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY)()FOOD? ?
S4	0	PC=20992
S5	1235523	SACK? ? OR BAG OR. BAGS OR PACKAG? OR CONTAINER? OR RECEPTACLE? OR BOX OR BOXED OR BOXES
S6	0	PC=(2641? OR 3070001)
S7	35001	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR HANDY()WIPE? ? OR RAG OR RAGS
S8	429941	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR - PAD OR PADS OR CLOTH OR CLOTHS
S9	79258	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBER? ?
S10	444538	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURATE? OR DRENCH?
S11	126826	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S12	278421	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S13	168852	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR - HYGEN?
S14	75214	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR CIDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S15	378338	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S16	382615	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S17	1037834	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S18	1075324	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S19	874485	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S20	328907	IC=B65D?
S21	45276	S1:S3
S22	537436	S7:S9
S23	1590	S21(10N)S5
S24	24233	S22(10N) (S10:S14)
S25	188858	(S15:S19) (10N)S5
S26	1190	S21 AND S22
S27	47	S26 AND S23
S28	22	S27 AND (S24 OR S25 OR S20)
S29	19	S28 AND PY<2002
S30	19	IDPAT (sorted in duplicate/non-duplicate order)

?show files

File 347:JAPIO Oct 1976-2003/Jun(Updated 031006)

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File 350:Derwent WPIX 1963-2003/UD,UM &UP=200368

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File 371:French Patents 1961-2002/BOPI 200209

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File 344:Chinese Patents Abs Aug 1985-2003/Apr

(c) 2003 European Patent Office

30/5,K/17 (Item 17 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

04278240 \*\*Image available\*\*  
PACKAGING MATERIAL FOR OILY FOOD AND CONTAINER USING SAID  
PACKAGING MATERIAL

PUB. NO.: 05-269940 [JP 5269940 A]  
PUBLISHED: October 19, 1993 (19931019)  
INVENTOR(s): TOMITA TAKEHITO  
YAMAMOTO HIDEKI  
YOSHIDA KOJI  
APPLICANT(s): TOPPAN PRINTING CO LTD [000319] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 04-074528 [JP 9274528]  
FILED: March 30, 1992 (19920330)  
INTL CLASS: [5] B32B-027/10; B32B-001/02; B65D-065/40  
JAPIO CLASS: 14.2 (ORGANIC CHEMISTRY -- High Polymer Molecular Compounds);  
11.4 (AGRICULTURE -- Food Products); 31.1 (PACKAGING --  
General)  
JAPIO KEYWORD: R042 (CHEMISTRY -- Hydrophilic Plastics); R057 (FIBERS --  
Non-woven Fabrics)  
JOURNAL: Section: M, Section No. 1545, Vol. 18, No. 37, Pg. 122,  
January 20, 1994 (19940120)

ABSTRACT

PURPOSE: To manufacture a packaging material of superior sense of beauty  
which spreads only a small amount of oil when an **oily food** in the hot  
state sold at a fastfood store or the like is stored in said packaging  
material.

CONSTITUTION: A packaging material is composed of a water absorbing polymer  
particle layer 3 and a polypropylene non-woven **cloth** layer 4 laminated  
successively on one face of a paper base 1 through a bonding resin layer 2.  
Also an **oily food container** of **bag** -shape or **box** -shape is  
manufactured by said packaging material.

PACKAGING MATERIAL FOR OILY FOOD AND CONTAINER USING SAID  
PACKAGING MATERIAL

...PUBLISHED: 19931019)  
INTL CLASS: B32B-027/10; B32B-001/02; B65D-065/40

ABSTRACT

... of superior sense of beauty which spreads only a small amount of oil  
when an **oily food** in the hot state sold at a fastfood store or the like  
is stored in...

... is composed of a water absorbing polymer particle layer 3 and a  
polypropylene non-woven **cloth** layer 4 laminated successively on one face  
of a paper base 1 through a bonding resin layer 2. Also an **oily food**  
**container** of **bag** -shape or **box** -shape is manufactured by said packaging  
material.

Set	Items	Description
S1	2104	SNACK?()FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C- HEESE()CURL? ?
S2	40054	POTATO()CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK) ()RIN- D? ? OR POTATOCHIP?
S3	200	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY) ()FOO- D? ?
S4	0	PC=20992
S5	492668	SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA- CL? OR BOX OR BOXED OR BOXES
S6	0	PC=(2641? OR 3070001)
S7	26686	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H- ANDY()WIPE? ? OR RAG OR RAGS
S8	260799	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR - PAD OR PADS OR CLOTH OR CLOTHS
S9	26160	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE- R? ?
S10	309388	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA- T? OR DRENCH?
S11	92795	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S12	194169	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S13	74309	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR - HYGEN?
S14	50276	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C- IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S15	184044	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S16	234759	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S17	426557	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S18	942102	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S19	497297	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S20	43793	IC=B65D?
S21	1735	(S1:S3) (10N) S5
S22	22220	(S7:S9) (10N) (S10:S12)
S23	1149419	(S15:S18)
S24	2133	S (S7:S9) (10N) (S10:S14)
S25	42	S21 AND (S22 OR S24) AND S23
S26	9	S25 AND S20
S27	42	S25 OR S26
S28	822	S21 AND S19(10N) (S5 OR S15:S18)
S29	215	S28 AND S20
S30	0	S29 AND S42
S31	9	S29 AND S27
S32	42	S31 OR S27
S33	42	IDPAT (sorted in duplicate/non-duplicate order)
S34	36	S33 AND PY<2002

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File 348:EUROPEAN PATENTS 1978-2003/Oct W03

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File 349:PCT FULLTEXT 1979-2002/UB=20031016,UT=20031009

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00636521

GREASE AND MOISTURE ABSORBING INSERTS FOR MICROWAVE COOKING.  
FETT UND FEUCHTIGKEIT ABSORBIERENDE EINLAGEN FUER DAS KOCHEN MIT  
MIKROWELLEN.

TAMPONS ABSORBANT LA GRAISSE ET L'HUMIDITE POUR CUISSON AU FOUR A  
MICRO-ONDES.

PATENT ASSIGNEE:

EASTMAN CHEMICAL COMPANY, (1745731), 100 North Eastman Road, Kingsport,  
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LEGAL REPRESENTATIVE:

Wibbelmann, Jobst, Dr. (72491), Wuesthoff & Wuesthoff Patent- und  
Rechtsanwalte Schweigerstrasse 2, D-81541 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 617686 A1 941005 (Basic)  
EP 617686 B1 950830  
WO 9312990 930708

APPLICATION (CC, No, Date): EP 93901889 921214; WO 92US11135 921214

PRIORITY (CC, No, Date): US 812933 911224; US 981348 921125

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LI; LU; MC;  
NL; PT; SE

INTERNATIONAL PATENT CLASS: B65D-081/34 ; B32B-027/12; B32B-005/24

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Lapse: 001213 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, CH 19951030, LI  
19951030, DK 19950830, GR 19950830, IE  
19951231, IT 19950830, LU 19951231, PT  
19951130, SE 19951130,

Lapse: 20000202 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, DK 19950830, GR  
19950830, IE 19951231, IT 19950830, LU  
19951231, PT 19951130, SE 19951130,

Lapse: 030502 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, DK 19950830, ES  
19950830, GR 19950830, IE 19951231, IT  
19950830, LU 19951231, MC 19950830, NL  
19950830, PT 19951130, SE 19951130,

Lapse: 030219 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, DK 19950830, ES  
19950830, GR 19950830, IE 19951231, IT  
19950830, LU 19951231, MC 19950830, NL  
19950830, PT 19951130, SE 19951130,

Lapse: 010613 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, CH 19950830, LI  
19950830, DK 19950830, GR 19950830, IE  
19951231, IT 19950830, LU 19951231, MC  
19950830, PT 19951130, SE 19951130,

Lapse: 001227 B1 Date of lapse of European Patent in a  
contracting state (Country, date): AT  
19950830, BE 19950830, CH 19950830, LI

19950830, DK 19950830, GR 19950830, IE  
 19951231, IT 19950830, LU 19951231, PT  
 19951130, SE 19951130,  
 Lapse: 020626 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 19950830, BE 19950830, CH 19950830, LI  
 19950830, DK 19950830, ES 19950830, GR  
 19950830, IE 19951231, IT 19950830, LU  
 19951231, MC 19950830, PT 19951130, SE  
 19951130,  
 Lapse: 030423 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 19950830, BE 19950830, DK 19950830, ES  
 19950830, GR 19950830, IE 19951231, IT  
 19950830, LU 19951231, MC 19951214, NL  
 19950830, PT 19951130, SE 19951130,  
 Application: 941005 A1 Published application (A1with Search Report  
 ;A2without Search Report)  
 Lapse: 20000209 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 19950830, BE 19950830, DK 19950830, GR  
 19950830, IE 19951231, IT 19950830, LU  
 19951231, PT 19951130, SE 19951130,  
 Examination: 941005 A1 Date of filing of request for examination:  
 940620  
 Examination: 941207 A1 Date of despatch of first examination report:  
 941021  
 Grant: 950830 B1 Granted patent  
 Lapse: 960403 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, SE 951130  
 Lapse: 960403 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, SE 951130  
 Lapse: 960529 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, BE 950830, SE  
 951130  
 Oppn None: 960821 B1 No opposition filed  
 Lapse: 980401 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, BE 950830, DE  
 970902, GB 961214, PT 951130, SE 951130  
 Lapse: 980408 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, BE 950830, DE  
 970902, DK 950830, GB 961214, PT 951130, SE  
 951130  
 Lapse: 980916 B1 Date of lapse of the European patent in a  
 Contracting State: AT 950830, BE 950830, DE  
 970902, DK 950830, FR 970829, GB 961214, IE  
 951231, PT 951130, SE 951130  
 Lapse: 991020 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 19950830, BE 19950830, DK 19950830, IE  
 19951231, IT 19950830, PT 19951130, SE  
 19951130,

LANGUAGE (Publication, Procedural, Application): English; English; English  
 FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPAB95	1676
CLAIMS B	(German)	EPAB95	1556
CLAIMS B	(French)	EPAB95	1980
SPEC B	(English)	EPAB95	16869
Total word count - document A 0			
Total word count - document B 22081			
Total word count - documents A + B 22081			

GREASE AND MOISTURE ABSORBING INSERTS FOR MICROWAVE COOKING.  
 INTERNATIONAL PATENT CLASS: B65D-081/34 ...

...SPECIFICATION B1  
 Field of the Invention

This invention relates to **inserts** useful in microwavable containers. The invention can further comprise fibers which are capable of spontaneously...

...thereof.

#### Background of the Invention

There is a need in the microwave food industry for **inserts** useful in microwavable containers that are more efficient in removing excess grease and moisture from food during cooking in a microwave oven.

A wide variety of **inserts** useful in microwavable food containers have been developed to improve the quality of food cooked in a microwave oven. For instance, it is known to place a liquid absorbent **pad** within a package for absorbing food byproducts such as **moisture** and grease exuded from food during cooking in a microwave oven (U.S. Patent No...).

...package for storing and cooking a food product including an absorbent bed enclosed within a **sealed plastic sleeve**. Also, U.S. Patent 4,950,524 discloses a bacon pad made of liquid absorbent...

...degreaser which uses a layer of absorbent fiber on the inside of a wicking material **envelope**.

Other known grease absorbing pads have been found to be useful, such as the insulating...

...the food. This is undesirable in that if part of the absorbent capacity of the **pad** is occupied by **moisture**, insufficient capacity may remain for grease.

It is also desirable in many cases for water...

...the food has been reduced compared to the weight at the time the package was **sealed**.

Therefore, there is a need in the art to find new microwavable **inserts** which show improvement over the standard microwavable **inserts** that are useful in microwavable food containers. This is true especially in the area of...

...grease or moisture transport depending on whether the food is prone to greasiness or a **combination** thereof.

Also disclosed in the art are microwavable **inserts** comprising a **plastic** film with a thin metal coating or "metallized film". The metallized film is generally used...

...703,148 describes this particular art in detail.

Also known in the art are microwavable **inserts** having two layers, the first of which is a top layer consisting of an absorbent layer made from fibers, the second of which is a metallized susceptor layer. These **inserts** are known as "Wavealites" (trademark).

In PCT Publication WO 90/12130 published October 18, 1990...

...unexpectedly discovered that use of fibers of sufficiently complex geometry, especially spontaneously transportable fibers, when **incorporated** into micro-wavable cooking structures, results in improved wetting and aids in aqueous and/or...1 - an enlarged cross-sectional view of a preferred embodiment of the invention, i.e., **Insert B**, as described herein.

Figure 2 - a perspective view of a preferred embodiment of the invention, **Insert A**, as described herein.

Figure 3 - an enlarged cross-sectional view of a preferred embodiment of the invention, **Insert A**, as described herein.

Figure 4 - an enlarged cross-sectional view of a preferred embodiment of the invention, **Insert C**, as described herein.

Figure 5 - a cross-sectional view of a typical known susceptor structure.

Figure 6 - a perspective view of a preferred embodiment of the invention, **Insert B**, as described herein.

Figure 7 - a perspective view of a preferred embodiment of the invention, **Insert A**, as described herein.

Figure 8 - schematic representation of a three dimensional view of an ...process of the invention.

Figure 52 - a graphical representation of absorption times for various

microwavable **inserts**.

Detailed Description of the Preferred Embodiments

The invention relates to an **insert** useful in a microwavable food container comprising first and second outer layers and an intermediate...

...16 and 32, is a substrate layer which is stable to microwave heating conditions. This **insert** is hereinafter referred to as "Insert A". The **plastic** layer may comprise polyester, nylon or the like. Preferably, the plastic layer is made from...

...of heat susceptor thickness.

The metallized layer is a microwave interactive layer which has been **incorporated** into disposable laminate materials used to cook the food. Such laminates are characterized by their...

...has been widely used in the form of aluminum foil as far as the general **packaging** of food is concerned.

The **plastic** layer is in direct physical contact with food providing the maximum amount of heat transfer...

...contact is important to the heating and crisping benefits provided by the present invention.

For **Insert A**, the susceptor layer or **plastic** layer contains a perforation feature comprising a plurality of openings therethrough or a perforated sheet...4,258,086 (issued Mar. 24, 1981 to N.J. Beall) each of which are **incorporated** herein by reference. These materials are widely known and a variety of suitable materials are...

...U.S. Patent No. 4,190,757 (issued February 26, 1980 to C.H. Turpin) **incorporated** herein by reference. In U.S. Patent No. 4,190,757, a heating body is...weight of the deposit as is taught in U.S. Patent No. 4,640,838 **incorporated** herein by reference.

The metal-coated material may be selectively demetallized to provide a pattern...

...that allows for more efficient wetting of the fiber, aqueous or grease transport or a **combination** of grease and moisture absorption if the appropriate surface energetics are applied. By "surface energetics..." aqueous fluids in single fibers. Thus preferred fibers for use herein are those with a **combination** of properties wherein an individual fiber is capable of spontaneously transporting water or n-decane...can be employed to test the spontaneous transportability phenomenon; however, it is often desirable to **incorporate** a minor amount of a colorant into the water to better visualize the spontaneous transport...can be tailored to work either as a grease absorber, a moisture absorber, or a **combination** of both just by varying the fiber lubricant. This allows the nonwoven fibers to be...

...for the Preparation Thereof" by Neal, Bagrodia, et al., filed on July 23, 1991, and **incorporated** herein by reference.

Ideally, to maximize the utility of this invention, two key features are...cross-section of Figure 26: (see image in original document)

The invention further comprises an **insert** useful in a microwavable food container comprising a first layer and a second layer bonded...

...axially along the fiber and wherein said fiber satisfies the equations as described hereinabove.

This **insert** is hereinafter referred to as "Insert B".

The first layer and the absorbent layer of **Insert B** are virtually identical to the first outer layer and the intermediate layer as described for **Insert A** with the exception that the susceptor or **plastic** layer does not comprise openings. However, the absorbent layer, 2 and 30, of **Insert B** is the layer positioned to contact the food. The first layer, 4 and 26, of **Insert B** can be bonded conventionally to paperboard or properly adhered to another flexible substrate such as paper or to a **plastic** sheet.

The invention further comprises an **insert** useful in microwavable food container comprising an absorbing pad, said pad comprising:

microwave radiation transparent...

...water.

Also, the fibers used in the pad are identical to the fibers used in **Inserts A** and **B**. The absorbing pad as described hereinafter is referred to as " **Insert C**", 18. It is preferred that a vapor tight microwave radiation transparent **enclosures** surrounds **Insert C**.

In selecting the pad material it is preferred to select a pad material that...

...grease contained in that food, that after the food is cooked and removed from the **enclosure**, the **enclosure** will not drip grease even when the opening through which the food was removed is lowermost on the **enclosure**. For example, such pads that can hold in the range of 0.1 to 0...  
...square centimeter of surface area have been found useful for packaging conventional bacon strips.

The **enclosure** may be made from one or more conventional polymeric packaging materials such as nylon/ionomer...

...the trade designation "Scotchpak" by Minnesota Mining and Manufacturing Company, St. Paul, Minnesota. Also the **enclosure** could be made from a metal foil.

While the package according to the present invention...

...includes means that will automatically vent the package during cooking. That means for venting the **enclosure** could comprise pre-formed openings in the **enclosure** that are initially closed by a manually removable cover (e.g., a piece of pressure...

...absorbing material adhered to a heat sensitive material forming at least a portion of the **enclosure**, which microwave radiation absorbing material will be heated by exposure to microwave radiation and will...

...form or open in the heat sensitive material during microwave cooking of the food.

The **inserts** of this invention can conform to a number of different packaging geometries. For instance, they...

...in the conventional flat sheet form for an "as is" cooking sheet. They can be **incorporated** into the bottom of a package, again as a flat cooking surface. These **inserts** can also be **incorporated** into three dimensional package structures such as cooking **sleeves** for the " **pocket** " sandwiches, as cooking **bags** for **popcorn** and similar foods, **boxes** for microwave french fries and tater tots, and as **pouches** for chicken, bacon, etc. The absorbing pads conforming to the structure of **Insert C** of this invention can be used as stand-alone absorbers to be **inserted** into packages as needed. It could also be produced as a roll stock and then...surface treatment such as a hydrophilic coating or plasma treatment as described hereinbefore.

The microwavable **inserts** of the invention are particularly useful in the microwave oven cooking of pan-fried frozen...

...rolls, potatoes, e.g., hashbrown patties, sausages, corn dogs and the like. Also, while the **inserts** of the invention typically are rectangularly shaped, other shapes, whether regular such as oval, wedge, log, circular or irregular or **combinations** thereof, can also be employed.

The following examples are to illustrate the invention but should...70 g/yd<sup>2</sup> (0.08 kg/m<sup>2</sup>). Samples 3 and 4, **Insert B** type structures, were two layered structures with the nonwoven bonded to the top of...

...into the thin nonwoven effectively blocked some of the transport channels. The 3-layer structures, **Insert A** type structures, also showed more rapid wicking of the fluid into the rest of the structure than **Insert B** type structures. Water transport with these samples was excellent. In the 3-layer structures...

...in the fibers. Bonding was accomplished through the glycol-modified poly(ethylene terephthalate) binder fibers (incorporated at both 20 and 30% total fiber content in these samples). For the tests, 2...sectioned samples, respectively.

For the tests, the nonwovens were bonded into the standard 3-layer (Insert A type) and 2-layer (Insert B type) absorber structure as before except this time a different susceptor was used. For...

...and nonwoven weight also contributed to the improved performance.

EXAMPLE 17 (Example of the Invention) -

**Saturation** Tests of These Fibers

The Hormel (trademark) microwave bacon pad was included in this testing. The denier per filament of the Hormel pad was 1...

...more than likely be superior to the Hormel sheet.

EXAMPLE 18 (Example of the Invention) -

(Insert C Type) Cooking Tests in Hormel Bacon Pouch

For this example, the Hormel absorbing pad was removed and various nonwovens of approximately the same size replaced and the pouch then microwaved. The average denier per filament of the cross-section of the fibers used...

...towels purchased from Fort Howard Company, Sample 5, trimmed down in size slightly, into the pouch and microwaving. The dry weight of the two towels was 5.8 g, the after...

...the net fluid absorption was around 26 grams. However, when removing the towels from the pouch there was excessive dripping of the grease.

(Table omitted) (Table omitted) (see image in original Samples

Samples were produced conforming to the description of Insert B as described for the invention using a calender bonding system. The fibers were 5...

...fibers was good. Addition of a perforated top layer as described for the invention for Insert A resulted in very good fluid transport. A sample of the laminate was trimmed and...

...that will be present in the final structure.

EXAMPLE 22

Methods of sample or microwavable insert structure preparation have been studied and tested. The most important change has been the removal of the glycol-modified poly(ethylene) terephthalate binder fibers incorporated at both 20 and 30% total fiber content. Instead, standard PET spontaneously wettable (SW) fibers...24 do not have the spun bonded layer attached.

EXAMPLE 23 - Testing of the Microwavable Insert Structures

Examples or samples of the structures are described in Table VI. The fibers used...performed used Sample 2 absorber structures. In most cases the original package was modified to incorporate our absorbers. An original, unmodified package was also cooked as a control.

A. Ore Ida...

...on top. All of this was done with 30 seconds less cooking time.

C. Hot Pockets Sandwiches

The normal package for this product is a metallized paper sleeve which fits around the sandwich. Cooking with this structure produced a fairly good sandwich although some cold spots were prevalent. A film of grease was noticeable on the metallized paperboard sleeve after cooking. To modify the package, a susceptor absorber was placed inside the sleeve over the standard metallized film. There was noticeable fluid absorption on the pad after cooking...

...CLAIMS section.

14. The absorbent structure of Claim 13 wherein a vapor tight microwave radiation transparent enclosure surrounds said pad.
15. The absorbent structure of Claims 1, 10, or 13 wherein diameter...The absorbent structure of Claim 28 wherein the lubricant is peanut oil based.

34. The **insert** of Claims 1, 10 or 13 wherein said fibers have coated thereon a layer of...  
...CLAIMS la revendication 28, dans laquelle le lubrifiant est a base d'huile d'arachide.  
34. **Insert** selon les revendications 1, 10 ou 13, dans lequel lesdites fibres portent une couche de...

34/5, K/13 (Item 13 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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00315269

Microwave food package and grease absorbent pad therefor.  
Mikrowellen-Verpackung und fettabsorbierendes Polster dafur.  
Emballage d'aliments destines a etre cuits dans un four a micro-ondes, et  
support absorbant pour cet emballage.

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PATENT (CC, No, Kind, Date): EP 303428 A2 890215 (Basic)  
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PRIORITY (CC, No, Date): US 82421 870810

DESIGNATED STATES: BE; DE; FR; GB; IT; NL; SE

INTERNATIONAL PATENT CLASS: H05B-006/64

CITED PATENTS (EP A): EP 218419 A; US 4042740 A; EP 271268 A; US 4587154 A

ABSTRACT EP 303428 A2

A package (10) of food (12) containing a substantial amount of water and solidified grease that can be cooked within the package in a microwave oven. A pad (14) adjacent the food comprises microwave radiation transparent generally hydrophobic liquid grease absorbing materials that are capable of holding the amount of grease in the food (12) when it is melted; and a vapor tight microwave radiation transparent **enclosure** (16) surrounding the pad (14) and food (12) includes means for venting steam from the **enclosure** as the food is cooked. Preferably, the pad (14) is produced from microfibers constructed of a composition comprising a blend containing substantially equal parts by weight of polypropylene and poly 4-methylpentene-1.

ABSTRACT WORD COUNT: 118

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\*Assignee: 910313 A2 Applicant (transfer of rights) (change):  
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states: BE;DE;FR;GB;IT;NL;SE)

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FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	257
SPEC A	(English)	EPABF1	8898
Total word count - document A			9155
Total word count - document B			0
Total word count - documents A + B			9155

...ABSTRACT in the food (12) when it is melted; and a vapor tight microwave radiation transparent **enclosure** (16) surrounding the pad (14) and food (12) includes means for venting steam from the **enclosure** as the food is cooked. Preferably, the pad (14) is produced from microfibers constructed of...

...SPECIFICATION collected grease after the cooking is complete.

It is known to place a liquid absorbent **pad** within a package for absorbing food byproducts such as **moisture** and grease exuded from food during cooking in a microwave oven. Such pads must not...

...the food. This is undesirable in that if part of the absorbent capacity of the **pad** is occupied by **moisture**, insufficient capacity may remain for grease. Alternatively, the capacity of the pad must be increased...

...the food has been reduced compared to the weight at the time the package was **sealed**.

#### Disclosure of Invention

The present invention provides a grease absorbing pad for use such as

...

...grease in the food after it has melted; and a vapor tight microwave radiation transparent **enclosure** surrounding the pad and food.

Alternatively, the generally hydrophobic grease absorbing pad may be provided...

...the teachings in U.S. Patents No's. 4,103,058 and 4,042,740 (incorporated herein by reference) so that the pad has a network of compacted high density regions...grease contained in that food, that after the food is cooked and removed from the **enclosure**, the **enclosure** will not drip grease even when the opening through which the food was removed is lowermost on the **enclosure**. For example, such pads that can hold in the range of about 0.1 to...

...square centimeter of surface area have been found useful for packaging conventional bacon strips.

The **enclosure** may be made of one or more conventional polymeric packaging materials such as nylon/ionomer...

...the trade designation "Scotchkpac" by Minnesota Mining and Manufacturing Company, St. Paul, Minnesota. Also the **enclosure** could be made of a grease resistant paperboard, and the bottom wall of the **enclosure** could be made of a metal foil.

While the package according to the present invention...

...includes means that will automatically vent the package during cooking. That means for venting the **enclosure** could comprise pre-formed openings in the **enclosure** that are initially closed by a manually removable cover (e.g., a piece of pressure...

...absorbing material adhered to a heat sensitive material forming at least a portion of the **enclosure**, which microwave radiation absorbing material will be heated by exposure to microwave radiation and will...

...640,838, entitled "Self-venting Vapor-tight Microwave Oven Package" issued February 3, 1987 and incorporated herein by reference.

Preferably, however, the radiation absorbing material is a metal vapor coating of...

...300 ohms per square (about 100 ohms per square preferred) either coated directly on the **enclosure** or coated on a polymeric film adhered to the **enclosure** by a suitable adhesive. When the package comprises heat sensitive material such as thermoplastic film...

...rupture and vent the package under the influence of steam or vapor pressure within the **enclosure**. When an adhesive layer adheres the deposit to the heat sensitive material which is to...

...micrometers.

When the radiation absorbing material is adhered on a polymeric film adhered to the **enclosure**, rupturing of the softened and weakened portions of the **enclosure** caused by heating of the deposit by microwaves can occur under the influence of steam or vapor pressure within the **enclosure**, or because one or both of the films shrink when they are heated causing tearing by which the film is adhered to an **enclosure** are impervious to vapors, but that deposit or adhesive will soften and weaken when heated...

...is adhered can also be adhered along a seal between layers of material forming the **enclosure** that is heat softenable so that heating of the layer during cooking of food within...

...by microwave energy will cause the seal to rupture because of vapor pressure in the **enclosure**.

The deposit can form an alpha numeric message or a distinctive pattern that informs the user of the self-venting nature of the package. Whether directly placed on the **enclosure** or cut from a pre-formed sheet that is adhered to the **enclosure**, the deposit may be shaped to concentrate the microwave energy. Preferably the deposit has a...

...is cooked, preferably the package further includes means for affording easy manual opening of the **enclosure** to afford removal of the food without the use of a knife or scissors. In one embodiment, this means is provided by the **enclosure** comprising face to face layers of the polymeric film having aligned edges defining one edge...

...apart the layers adjacent that edge. In another embodiment this means is provided by the **enclosure** having a first side edge defined by the polymeric film, the means for venting comprising...

...film on which the flap is formed along its opposite edges. In both embodiments the **enclosure** can be opened without substantially compressing it which restricts forcing steam or other hot vapors from within the **enclosure** that could otherwise burn the person opening the package. Alternatively the package may incorporate an easy open tab of the type described in U.S. Patent No. 4,664...

...food may be placed in the package by a producer or meat packer, whereupon the **enclosure** may be evacuated of air and the package frozen or maintained at low temperatures until it is used by simply placing it in a microwave oven. Since the **pad** is generally hydrophobic, it will not be affected by **moisture** in the package during storage. Alternatively, if desired, a food or substance may be placed...

...so as to support a food as herein described within a microwave oven without an **enclosure**.

#### Brief Description of the Drawing

The present invention will be further described with reference to...the teachings in U.S. Patents No's. 4,103,058 and 4,042,740 (incorporated herein by reference) so that the pad has a network of compacted high density regions...2 liters of water in a 18.9 liter (5 gallon) pail. The pail was sealed and remained for 24 hours at 25(degree)C (77(degree)F). After 24 hours...

...950% grease absorbing capacity of the pad, as previously discussed.

The hydrophobic properties of this **pad** is important not only so that **moisture** is not absorbed from the food during storage and transportation, but also during cooking. The...grease contained in that food, that after the food is cooked and removed from the **enclosure**, the **enclosure** will not drip grease even when the opening through which the food was removed is lowermost on the **enclosure**. For example, such pads that can hold in the range of about 0.1 to...

...found useful for packaging conventional bacon strips.

A generally rectangular vapor tight microwave radiation transparent **enclosure** 16 surrounds the pad 14 and food 12 and comprises top and bottom rectangular sheets...

...peripheries with the pad 14 and food 12 therebetween.

Means are provided for venting the **enclosure** 16 to afford cooking the food 12 within the **enclosure** 16 in a microwave oven, which means for venting comprises a layer of microwave radiation...

...by a suitable adhesive to the top sheet 17 of the polymeric film forming the **enclosure** 16. The vapor coated film 20 and top sheet 17 of polymeric film forming the **enclosure** 16 will be softened by heating of the metal vapor coating to cause rupturing of...

...of film and vapor coated film 20 due to steam or vapor pressure within the **enclosure** 16 and/or different amounts of shrinking of the films 17 and 20 during cooking...

...and the vapor coated film 20 will allow excess steam or vapor pressure within the **enclosure** 16 to escape, while retaining sufficient steam or vapor within the **enclosure** 16 to enhance cooking of the food 12.

Also included in the package 10 are means for affording easy manual opening of the **enclosure** 16 to facilitate removal of the food 12.

A portion of the seal 19 between...about 0.8 ounces were placed on the pillowed surface of the pad 14. The **enclosure** 16 was formed from top and bottom rectangular sheets 17 and 18 of the material...

...centimeter (0.002 inch) thick. The top and bottom sheets 17 and 18 were heat **sealed** together around their peripheries, and a 2.5 centimeter (1 inch) by 5 centimeters (2...

...contained in the pad 14 and did not drip from the pad 14 after the **enclosure** was opened, and no significant distortion of the pad 14 was seen even though the...

...during the cooking process, causing both films 17 and 20 to rupture and vent the **enclosure** 16 due either to the steam or vapor pressure within the **enclosure** 16 or because of different rates of shrinkage between the oriented top sheet 17 and the oriented vapor coated film 20, or a **combination** of both effects. The ruptured films 17 and 20 still restricted release of the steam or vapor within the **enclosure** 16, however, so that only enough of the steam or vapor was released to prevent the **enclosure** 16 from exploding, and sufficient hot steam or vapor was retained in the **enclosure** 16 to fully inflate it and surround the bacon within it to aid in the...

...used as the material for the top and bottom sheets 17 and 18 of the **enclosure** 16.

Referring now to Figures 5 through 8 there is shown a second embodiment of...

...the food when that grease is liquefied. A generally rectangular vapor tight microwave radiation transparent **enclosure** 36 surrounds the pad 34 and food 32 and comprises top and bottom rectangular sheets...

...peripheries with the pad 34 and food 32 therebetween.

Means are provided for venting the **enclosure** 36 to afford cooking the food 32 within the **enclosure** 36 in a microwave oven which means for venting comprises a layer of microwave radiation...

...adhesive transversely across one end of the top sheet 37 of polymeric film forming the **enclosure** 36 adjacent one side edge 41 of the **enclosure** 36. The vapor coated film 40 and top sheet 37 of polymeric film forming the **enclosure** 36 will be softened by heating of the metal vapor coating to cause rupturing of...

...of film and vapor coated film 40 due to steam or vapor pressure within the **enclosure** 36 and/or different amounts of shrinking of the films 37 and 40 during cooking...

...and the vapor coated film 40 will allow excess steam or vapor pressure within the **enclosure** 36 to escape, while retaining sufficient steam or vapor within the **enclosure** 36 to enhance cooking of the food 32.

Also included in the package 30 are means for affording easy manual opening of the **enclosure** 36 to facilitate removal of the food 32.

The top sheet 37 of polymeric film...

...be manually pulled apart (see Figure 8) to separate the top sheet 37 of the **enclosure** 36 along the length of metal vapor coated film 40 and tear it along its...

...the food when that grease is liquefied. A generally rectangular vapor tight microwave radiation transparent **enclosure** 56 surrounds the pad 54 and food 52 and comprises top and bottom rectangular sheets...

...peripheries with the pad 54 and food 52 therebetween.

Means are provided for venting the **enclosure** 56 to afford cooking the food 52 within the **enclosure** 56 in a microwave oven which means for venting comprises a layer of microwave radiation...

...adhered by a suitable adhesive along the seal 59 across one end 62 of the **enclosure** 56. The vapor coated film 60, sheets 57 and 58 of polymeric film and seal...

...to cause rupturing of the seal 59 due to steam or vapor pressure within the **enclosure** 56 so that excess steam or vapor pressure within the **enclosure** 36 will escape through the weakened seal 59, while retaining sufficient steam or vapor within the **enclosure** 56 to enhance cooking of the food 52.

The sheets 57 and 58 can then...

...along the weakened seal 59 which provides means for affording easy manual opening of the **enclosure** 56 to facilitate removal of the food 52.

U.S. Patent No. 4,664,263...

...present invention as a substitute for the other means for affording easy opening of the **enclosures** 16, 36 or 56. The following description, except for the last paragraph, has been copied...118 which supports a bag 119 formed of a flexible polymeric material such as the **bags** formed for containing microwavable **popcorn**. The flexible **bag** 119 of the illustrated **package** is formed with an easy open tab 120 constructed according to the present invention. As...embodiments thereof and further alternatives for the means for affording easy manual opening of the **enclosure** which were described in U.S. Patent No. 4,664,263. It will be apparent...

...CLAIMS A3

1. A package (10) having a vapor tight microwave radiation transparent **enclosure** (16) surrounding a food (12) containing a substantial amount of water and solidified grease for...

...invention characterized by a pad (14) adapted to be placed adjacent the food within the **enclosure** and produced from generally microwave radiation transparent and generally hydrophobic grease absorbing microfibers constructed of...

...methylpentene-1.

2. The package of claim 1, further characterized including means for venting said **enclosure** to afford cooking said substance within said **enclosure** in the microwave oven.

3. The package of claim 1, further characterized including means for affording easy manual opening of said **enclosure** to facilitate removal of the food.

4. The package of claim 1, further characterized said...

34/5,K/29 (Item 11 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00238724

**GREASE AND MOISTURE ABSORBING INSERTS FOR MICROWAVE COOKING**  
**TAMPONS ABSORBANT LA GRAISSE ET L'HUMIDITE POUR CUISSON AU FOUR A**  
**MICRO-ONDES**

Patent Applicant/Assignee:  
EASTMAN KODAK COMPANY,

Inventor(s):

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LANE Billie Glynn,  
PHILLIPS Bobby Mal,

Patent and Priority Information (Country, Number, Date):

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Priority Application: US 91933 19911224; US 92348 19921125

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Main International Patent Class: B65D-081/34

International Patent Class: B32B-27:12; B32B-05:24

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 21547

**English Abstract**

A novel **insert** useful in a microwavable food **container** comprising a metallized layer of heat susceptor thickness or a **plastic** layer, having openings which are in a position to be adjacent to food in said container, a layer of absorbant material comprising fibers, and a substrate layer which is stable to microwave heating conditions. The invention also is directed towards other **inserts** useful in microwavable food containers comprising fibers which are capable of spontaneously transporting water or n-decane on the surface thereof.

**French Abstract**

Tampon d'un type nouveau destine aux recipients pour aliments allant au four a micro-ondes, comprenant une couche metallisee de materiel sensible a la chaleur ou une couche plastique munie d'ouvertures positionnees de facon a etre proches de l'aliment dans le recipient, une couche de materiel absorbant fibreux et un substrat restant stable aux conditions de chauffage par micro-ondes. Sont egalement decrits d'autres tampons destines a la meme utilisation et comprenant des fibres capables d'amener spontanement l'eau ou le n-decane a la surface des recipients.

**GREASE AND MOISTURE ABSORBING INSERTS FOR MICROWAVE COOKING**

Patent and Priority Information (Country, Number, Date):

Patent: ... 19930708

Main International Patent Class: B65D-081/34

Fulltext Availability:

Detailed Description

Claims

**English Abstract**

A novel **insert** useful in a microwavable food **container** comprising a metallized layer of heat susceptor thickness or a **plastic** layer, having openings which are in a position to be adjacent to food in said...

...layer which is stable to microwave heating conditions. The invention also is directed towards other **inserts** useful in microwavable food containers comprising fibers which are capable of spontaneously transporting water or...

Publication Year: 1993

**Detailed Description**

**GREASE AND MOISTURE ABSORBING INSERTS**

FOR MICROWAVE COOKING

Field of the Invention

This invention relates to **inserts** useful in microwavable containers. The invention can further comprise fibers which are capable of spontaneously...

...thereof.

Background of the Invention

There is a need in the microwave food industry for **inserts** useful in microwavable containers that are more efficient in removing excess grease and moisture from food during cooking in a microwave oven.

A wide variety of **inserts** useful in microwavable food containers have been developed to improve the quality of food cooked in a microwave oven. For instance, it is known to place a liquid absorbent **pad** within a package for absorbing food byproducts such as **moisture** and grease exuded from food during cooking in a microwave oven (U.S. Patent No...).

...package for storing and cooking a food product including an absorbent bed enclosed within a **sealed plastic sleeve**. Also, U.S. Patent 4,950,524 discloses a bacon pad made of liquid absorbent...

...degreaser which uses a layer of absorbent fiber on the inside of a wicking material **envelope**. Other known grease absorbing pads have been found to be useful, such as the insulating food. This is undesirable in that if part of the absorbent capacity of the **pad** is occupied by **moisture**, insufficient capacity may remain for grease.

It is also desirable in many cases for water...

...the food has been reduced compared to the weight at the time the package was **sealed**. Therefore, there is a need in the art to find new microwavable **inserts** which show improvement over the standard microwavable **inserts** that are useful in microwavable food containers. This is true especially in the area of...

...grease or moisture transport depending on whether the food is prone to greasiness or a **combination** thereof. Also disclosed in the art are microwavable **inserts** comprising a **plastic** film with a thin metal coating or "metallized film". The metallized film is generally used...

...703,148 describes this particular art in detail.

Also known in the art are microwavable **inserts** having two layers, the first of which is a top layer consisting of an absorbent layer made from fibers, the second of which is a metallized susceptor layer. These **inserts** are known as "Wavealites" (trademark).

In PCT Publication WO 90,-,'12130 published October 18, 1990...

...unexpectedly discovered that use of fibers of sufficiently complex geometry, especially spontaneously transportable fibers, when **incorporated** into micro-wavable cooking structures, results in

improved wetting and aids in aqueous and/or...

...in the art noted above are met with the present invention which relates to an **insert** useful in a microwavable food container comprising first and second outer layers, and an intermediate...preferably, comprise a metallized coating of heat susceptor thickness.

The invention also relates to an **insert** useful in a microwavable food container comprising a first layer and a second layer bonded...

...preferably, comprise a metallized coating of heat susceptor thickness.

The invention also relates to an **insert** wherein said second layer comprises at least one fiber having at least one continuous groove...

...minor axis dimension across the fiber 3.0 cross-section.

The invention further relates to an **insert** useful in microwavable food container comprising an absorbing pad. The pad further comprises microwave radiation...1 - an enlarged cross-sectional view of a preferred embodiment of the invention, i.e., **Insert B**, as described herein.

Figure 2 - a perspective view of a preferred embodiment of the invention, **Insert A**, as described herein.

Figure 3 - an enlarged cross-sectional view of a preferred embodiment of the invention, **Insert A**, as described herein,

Figure 4 - an enlarged cross-sectional view of a preferred embodiment of the invention, **Insert C**, as described herein.

Figure 5 - a cross-sectional view of a typical known susceptor structure.

Figure 6 - a perspective view of a preferred embodiment of the invention, **Insert B**, as described herein.

Figure 7 - a perspective view of a preferred embodiment of the invention, **Insert A**, as described herein.

Figure 8 - schematic representation of a three dimensional view of an...process of the invention, Figure 52 - a graphical representation of absorption times for various microwavable **inserts**.

**Detailed Description of the Preferred Embodiments**  
The invention relates to an **insert** useful in a microwavable food container comprising first and second outer layers and an intermediate...

...16 and 32, is a substrate layer which is stable to microwave heating conditions. This **insert** is hereinafter referred to as "Insert All. The **plastic** layer may comprise polyester, nylon or the like. Preferably,,

the plastic layer is made ...of heat susceptor thickness.

The metallized layer is a microwave interactive layer which has been **incorporated** into disposable laminate materials used to cook the food. Such laminates are characterized by their...

...has been widely used in the form of aluminum foil as far as the general **packaging** of food is concerned, The **plastic** layer is in direct physical contact with food providing the maximum amount of heat transfer...

...contact is important to the heating and crisping benefits provided by the present invention, For **Insert A** the susceptor layer or **plastic** layer contains a perforation feature comprising a plurality of openings therethrough or a perforated sheet...4,258,086 (issued Mar, 24, 1981 to N.J. Beall) each of which are **incorporated** herein by reference, These materials are widely known and a variety of suitable materials are...U.S, Patent No. 4,190,757 (issued February 26,, 1980 to C.H, Turpin) **incorporated** herein by reference. In U.S. Patent No. 4,190,757, a heating body is...

...weight of the deposit as is taught in U.S. Patent No. 4,640,838 **incorporated** herein by reference, The metal-coated material may be selectively demetallized to provide a pattern...that allows for more efficient wetting of the fiber, aqueous or grease transport or a **combination** of - 19 grease and moisture absorption if the appropriate surface energetics are applied, By "surface...aqueous fluids in single fibers.

Thus preferred fibers for use herein are those with a **combination** of properties wherein an individual fiber is capable of spontaneously transporting water on n-decane...can be employed to test the spontaneous transportability phenomenon; however,, it is often desirable to **incorporate** a minor amount of a colorant into the water to better visualize the spontaneous transport...can be tailored to work either as a grease absorber, a moisture absorber, or a **combination** of both just by varying the fiber lubricant, This allows the nonwoven fibers to be...

...for the Preparation Thereof" by Neal, Bagrodia, et al., filed on July 23, 1991, and **incorporated** herein by reference.

Ideally, to maximize the utility of this invention, two key features are...1.72  
 $4 \times 37.5 + (7T - 2) 49*6$   
The invention further comprises an **insert** useful in a microwavable food container comprising a first layer and a second layer bonded...

...axially along the fiber and wherein said fiber satisfies the equations as described hereinabove.

This **insert** is hereinafter referred to as " **Insert B**".

The first layer and the absorbent layer of **Insert B** are virtually identical to the first outer layer and the intermediate layer as described for **Insert A** with the exception that the suscepter or **plastic** layer does not comprise openings. However, the absorbent layer, 2 and 30, of **Insert B** is the layer positioned to contact the food. The first layer, 4 and 26, of **Insert B** can be bonded conventionally to paperboard or properly adhered to another flexible substrate such as paper or to a **plastic** sheet.

The invention further comprises an **insert** useful in microwavable food container comprising an absorbing pad, said pad comprising.

microwave radiation transparent...

...40

Also, the fibers used in the pad are identical to the fibers used in **Inserts A** and **B**. The absorbing pad as described hereinafter is referred to as "**Insert C**", 18, It is preferred that a vapor tight microwave radiation transparent **enclosures** surrounds **Insert C**.

In selecting the pad material it is preferred to select a pad material that...

...grease contained in that food, that after the food is cooked and removed from the **enclosure**, the **enclosure** will not drip grease even when the opening through which the food was removed is lowermost on the **enclosure**, For example, such pads that can hold in the range of 0.1 to 0...

...square centimeter of surface area have been found useful for packaging conventional bacon strips.

The **enclosure** may be made from one or more conventional polymeric packaging materials such as nylon, \*@ionomer...

...the trade designation "Scotchpak" by Minnesota Mining and Manufacturing Company, St. Paul, Minnesota. Also the **enclosure** could be made from a metal foil.

While the package according to the present invention...

...includes means that will automatically vent the package during cooking. That means for venting the **enclosure** could comprise pre formed openings in the **enclosure** that are initially closed by a manually removable cover (e.g., a piece of pressure...

...absorbing material adhered to a heat sensitive material forming at least a portion of the **enclosure**, which microwave radiation absorbing material will be heated by exposure to microwave radiation and 5...

...form or open in the heat sensitive material during microwave cooking of the food.

The **inserts** of this invention can conform to a number of different packaging geometries. For instance, they...

...in the conventional flat sheet form for an "as is" cooking sheet. They can be incorporated into the bottom of a package, again as a flat cooking surface. These inserts can also be incorporated into three dimensional package structures such as cooking sleeves for the "pocket" sandwiches, as cooking bags for popcorn and similar foods, boxes for microwave french fries and tater tots, and as pouches for chicken, bacon, etc. The absorbing pads conforming to the structure of Insert C of this invention can be used as stand-alone absorbers to be inserted into packages as needed. It could also be produced as a roll stock and then...surface treatment such as a hydrophilic coating or plasma treatment as described hereinbefore.

The microwavable inserts of the invention are particularly useful in the microwave oven cooking of pan-fried frozen...

...rolls, potatoes, e.g., hashbrown patties, sausages, corn dogs and the like. Also, while the inserts of the invention typically are rectangularly shaped, other shapes, whether regular such as oval, wedge, log, circular or irregular or combinations thereof, can also be employed.

The following examples are to illustrate the invention but should...a nonwoven weight of 70 g., 0yd<sup>2</sup> (0\*08 kg/om<sup>2</sup>). Samples 3 and 4. Insert B type structures, were two layered structures with the

I

- 52

nonwoven bonded to the...

...into the thin nonwoven effectively blocked some of the transport channels. The 3-layer structures, Insert A type structures,, also showed more rapid wicking of the fluid into the rest of the structure than Insert B type structures. Water transport with these samples was excellent. In the 3-layer structures...in the fibers. Bonding was accomplished through the glycol-modified poly(ethylene terephthalate) binder fibers (incorporated at both 20 and 30% total fiber content in these samples). For the tests,, -2...

...sectioned samples,, respectively.

For the tests, the nonwovens were bonded into the standard 3-layer (Insert A type) and 2-layer (Insert B type) absorber structure as before except this time a different susceptor was used. For...and nonwoven weight also contributed to the improved performance.

#### EXAMPLE 17 (Example of the Invention)

**Saturation** Tests of These Fibers  
The Hormel (trademark) microwave bacon pad was included in this testing. The denier per filament of the Hormel pad was 1...

...more than likely be superior to the Hormel sheetw

EXAMPLE 18 (Example of the Invention)  
(Insert C Type) Cooking Tests in  
Hormel Bacon Pouch  
For this example, the Hormel absorbing pad was

removed and various nonwovens of approximately the same size replaced and the **pouch** then microwaved. The average denier per filament of the cross-section of the fibers used purchased from Fort Howard Company, Sample 5. trimmed down in size slightly, into the **pouch** - 57 and microwaving. The dry weight of the two towels was 5,8 gr the...

...the net fluid absorption was around 26 grams. However, when removing the towels from the **pouch** there was excessive dripping of the grease.

Table I  
Water Soybean  
Abs. Oil Abs,  
Sam...

...g of  
grease/water absorbed.

3-layer, Some charring on top  
Lubricant X edges of **pouch** where  
lube fibers, overlap occurred.

extra thick non- Better texture after 3-layer,, "HI' Excellent...  
EXAMPLE-20 - Preparation of Calender Bonded Samples  
Samples were produced conforming to the description of **Insert** B as described for the invention using a calender bonding system. The fibers were 5...be resent in the final p structure.

zo EXAMPLE 22  
Methods of sample or microwavable **insert** structure preparation have been studied and tested. The most important change has been the removal of the glycol modified poly(ethylene) terephthalate binder fibers **incorporated** at both 20 and 30t total fiber content.

Instead, standard PET spontaneously wettable (SW) fibers...24 do not have the spun bonded layer attached.

EXAMPLE 23 - Testing of the Microwavable **Insert** Structures

Examples or samples of the structures are described in Table VI. The fibers used...performed used Sample 2 absorber structures. In most cases the original package was modified to **incorporate** our absorbers. An original, unmodified package was also cooked as a control.

Aa Ore Ida...

...on top. All of  
this was done with 30 seconds less cooking time.

co Hot **Pockets** Sandwiches  
The normal package for this product is a metallized paper **sleeve** which fits around the sandwich. Cooking with this structure produced a fairly good sandwich although some cold spots were prevalent. A film of grease was noticeable on the metallized paperboard **sleeve** after cooking. To modify the package, a susceptor absorber was placed inside the **sleeve** over the standard metallized film. There was noticeable fluid absorption on the pad after cooking...

Claim

1 An **insert** useful in a microwavable food container comprising first and second outer layers, and an intermediate...

...second outer layer is a substrate which is stable to microwave heating conditions.

2\* The **insert** of Claim 1 wherein said **plastic** layer comprises a metallized coating of heat susceptor thickness,

3 The **insert** of Claim 1 wherein said **plastic** layer comprises a heating body further comprising a supporting sheet and a non-metallic,, active microwave absorber which has been applied to said supporting sheet.

4 The **insert** of Claim 1 wherein said intermediate layer comprises at least one fiber having at least...

...section and D is the minor axis dimension across the fiber cross-section.

5\* The **insert** of Claim 1 wherein said intermediate layer comprises at least one fiber having at least...

...and D is the minor axis dimension across the fiber cross-section.

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6 The **insert** of Claim 1 wherein said third layer is selected from the group consisting of a **plastic** film layer, paper or paperboard.

7o The **insert** of Claim 1 wherein said layers are adhesively bonded together.

So The **insert** of Claim 1 wherein said layers are thermally bonded together,

9o The **insert** of Claim 1 wherein said absorbent layer comprises a nonwoven made from polyester staple fibers.

10 The **insert** of Claim 9 wherein said polyester staple fibers of said nonwoven are bonded together during use of a calendering roll method.

11 The **insert** of Claim 10 wherein a spun-bonded polyester layer is applied to the top of said nonwoven during said calender roll method,

12o An **insert** useful in a microwavable food container comprising a first layer and a second layer bonded...

...section and D is the minor axis dimension across the fiber cross-section.

13 An **insert** useful in a microwavable food container comprising a first layer and a second layer bonded...

...section and D is the minor axis dimension across the fiber cross-section.

14 The **insert** of Claims-12 or 13 wherein said **plastic** layer comprises a metallized coating of heat susceptor thickness.

15\* The **insert** of Claims 12 or 13 wherein said **plastic**

layer comprises a heating body further comprising a supporting sheet and an active microwave absorber which has been applied to said supporting sheet.

16 An **insert** useful in microwavable food container comprising an absorbing pad, said pad comprising: microwave radiation transparent...section and D is the minor axis dimension across the fiber cross-section.

17\* An **insert** useful in microwavable food container comprising an absorbing pad, said pad comprising: microwave radiation transparent...

...and D is the minor axis dimension across the fiber cross-section. - so

18 The **insert** of Claims 17 or 18 wherein a vapor tight microwave radiation transparent **enclosure** surrounds said pad.

19w The **insert** of Claims 1. 12, 13, 16 or 17 wherein diameter of circumscribed circle of said fiber is less than 30 microns.

20a The **insert** of Claims 12, 13y 16 or 17 wherein diameter of circumscribed circle of said fibers is less than 10 microns.

21\* The **insert** of Claims 4. 12 or 16 wherein each said fiber satisfies the equation

12iT\* 10...

...in gramszcc,,  
and dpf is the denier per filament of the single fiber.

22 The **insert** of Claims 5, 13 or 17 wherein each said fiber satisfies the equation  
12rel0@4...

...in  
gramszcc, and dpf is the denier per filament of the single fiber.

23 The **insert** of Claims 1. 12, 16 or 17 wherein the width of each groove in said...

...81  
to or less than the width of the groove at its mouth.

24\* The **insert** of Claims 1, 12, 13, 16 or 17 wherein 2r for each fiber is greater than 1.

D

25\* The **insert** of Claims 1, 12, 13, 16 or 17 wherein 2r is from 1 to 5.

D

26 The **insert** of Claims 1, 12, 13, 16 or 17 wherein X for each said fiber is greater than 1

27\* The **insert** of Claims 1. 12, 13, 16 or 17 wherein X for each said fiber is greater than 2

28 The **insert** of Claims 1. 12f 13, 16 or 17 wherein X for each said fiber is greater than 3.

.25 29\* The **insert** of Claims 1. 12, 13, 16 or 17 wherein each said fiber has a single fiber denier per filament between 1 and 1,000.

30\* The **insert** of Claims 4. 12, or 16 wherein each said fiber has an effective adhesion tension for water of-greater than 38 dynes.,ecm.

31e The **insert** of Claims 4, 12 or 16 wherein each said

fiber has an effective adhesion tension for water  
,35 of greater than 45 dynes./cm.

32\* The **insert** of Claims 1, 12F 13f 16 or 17 wherein  
said fibers comprise a blend containing  
substantially equal parts by weight of  
polypropylene and poly 4-methylpentene

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33 The **insert** of Claims 5,, 13 or 17 wherein said  
fibers have coated thereon a layer of a hydrophobic  
lubricant.

34\* The **insert** of Claims 5, 11 or 15 wherein said  
fibers comprise a high inherent viscosity homo  
polymer further comprising poly(ethylene)  
terephthalate.

35e The **insert** of Claim 1 where said hydrophobic  
lubricant comprises 49% polyethylene glycol 600  
monolaurate,

36 The **insert** of Claim 33 wherein the lubricant is  
is mineral oil based.

37a The **insert** of Claim 36 wherein said lubricant  
comprises 80-83% mineral oil, 7-9% ethoxylated  
sorbitan monolaurate, 9,5 5% sorbitan  
monolaurate and 80-90 ppm. of chlorine dioxide,

38 The **insert** of Claim 33 wherein the lubricant is  
peanut oil based,

39 The **insert** of Claims 4, 12 or-16 wherein said  
fibers have coated thereon a layer of hydrophilic  
lubricant.

40 The **insert** of Claim 39 wherein said hydrophilic  
lubricant comprises 49%- polyethylene glycol 600  
monolaurate,

41 The **insert** of Claim I wherein said openings have an  
effective diameter in the range of 0.5 mm to 5 mm.

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42 The **insert** of Claim 1 wherein said first layer  
comprises openings having an elongated shape.

43\* The **insert** of Claim 42 wherein said openings have a  
major axis length of 1.--@4 to...

...to 1.27  
cm) and a minor axis of less than 2 mm.

44e The **insert** of Claims 1, 12, 13, 16 or 17 wherein  
portions of said pad adjacent said food are  
thermally embossed.

45 The **insert** of Claims 1, 12 or 16 wherein said  
fibers are plasma treated.

46e The **insert** of Claims 1. 12, 13, 16 or 17 wherein  
said fiber has a cross-section which is H-shaped.

47\* The **insert** of Claim 46 wherein said fiber has a  
cross-section substantially as described in  
Figure...

...W5  
is between 5 and 50A, and W6 is between 20 and  
200A,

48\* The **insert** of Claim 47 wherein W2 is less than log,  
w3is between 20 and 100A, W4 is between 20 and  
100A, and W5 is between 5 and 20g..

49 The **insert** of Claims 1, 12, 13, 16 or 17 wherein

...having a hydrophobic lubricant and at least one fiber having a hydrophilic lubricant.  
50s The **insert** of Claim I wherein said absorbent material comprising at least one fiber having at - 84...

...section  
and D is the minor axis dimension across the fiber cross-section.

51 The **insert** of Claim 50 comprising at least 2 layers,  
52\* The **insert** of Claim 51 comprising at least one hydrophilic layer bonded with at least one hydrophobic layer.  
53 The **insert** of Claim 50 wherein the fibers are intimately blended within the layers.

34/5, K/32 (Item 14 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00227746 \*\*Image available\*\*

**FOOD CONTAINERS**

**RECIPIENTS POUR ALIMENTS**

Patent Applicant/Assignee:

PLUMMER Norman David,

Inventor(s):

PLUMMER Norman David,

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Detailed Description

Claims

Fulltext Word Count: 28912

**English Abstract**

Food container means are provided which facilitate serving and/consumption of food and possibly drinks. An elongate food holder (12) adapted to be open at one (the upper) end comprises means, e.g. tape (22), to move an article of food (34) controllably out through that end by having the food article (34) resting on a loop of the tape (22) and pulling the tape over a folded layer (603) over a lip of container (12). The food container means comprise a **combination** of interconnected food and/or drink holders (12, 94, 86), allowing the **combination** to be held in one hand during selective consumption of the respective contents of the holders. The invention also extends to means to connect together e.g. a canister (94) of drink and a bag (352) of crisps/chips, also to machinery for "rolling" (by opening and closing) a flat tubular blank (12) and for making a triangular end sealing **pocket** (638, 640) for a rectangular tubular blank (12) from two flat strips (652, 654) of plastics tape. Methods of erecting a blank (12) and a reinforced tray (220) from the flat, rapidly with one hand, are shown.

**French Abstract**

Recipients pour aliments facilitant le service et/ou la consommation de la nourriture et eventuellement des boissons. Un recipient allonge (12) adapte pour etre ouvert a l'une de ses extremites (l'extremite superieure) comporte un element tel qu'un ruban (22) permettant de retirer de maniere controlable un aliment (34) a travers ladite extremite puisque ledit aliment (34) est pose sur une boucle formee par le ruban (22), et que l'on tire le ruban par dessus un volet (603) replie au niveau du rebord du recipient (12). Lesdits recipients comportent une combinaison de recipients interconnectes pour aliments et/ou boissons (12, 94, 86) pouvant tenir dans une main pendant l'ingestion selective du contenu des recipients respectifs. On a egalement prevu des elements servant a relier l'un a l'autre, par exemple, une canette (94) renfermant une boisson et un sachet (352) renfermant des chips, ainsi que des machines servant a ouvrir et a fermer une ebauche tubulaire et plate (12) et a produire une pochette triangulaire de fermeture (638, 640) pour l'extremite d'une ebauche tubulaire rectangulaire (12) a partir de deux bandes plates (652, 654) de ruban en plastique. On presente des procedes de construction rapide et d'une seule main d'une ebauche (12) et d'un plateau renforce (220) a partir des bandes plates.

Patent and Priority Information (Country, Number, Date):

Patent: ... 19930204  
Main International Patent Class: B65D-083/00  
International Patent Class: B65D-33:14 ...  
Fulltext Availability:  
Detailed Description  
Claims

English Abstract

...folded layer (603) over a lip of container (12). The food container means comprise a **combination** of interconnected food and/or drink holders (12, 94, 86), allowing the **combination** to be held in one hand during selective consumption of the respective contents of the...

...opening and closing) a flat tubular blank (12) and for making a triangular end sealing **pocket** (638, 640) for a rectangular tubular blank (12) from two flat strips (652, 654) of...

Publication Year: 1993

Detailed Description

FOOD CONTAINERS"

DTIMODUCTION

This specification is **combined** from several earlier specifications and will be most readily understood if the text of these...

...in the appended Feature 1, food container means as defined in Feature 26 and a **combination** of food and container as defined in Feature 30.

By solid food is meant food...

...of maintaining its own shape) but, if the food is rigid in form, the tubular **container** could be **flexible**, e.g. in one (usually horizontal) direction, as for example with corrugated flexible paper or...dispensing of said liquid upon operation of said raising means. This can be facilitated by **combining** said liquid container with said loop, preferably said loop is formed of a tube which...or a variety of foods, the food container comprises a second open-topped tubular container **combined** with the firstmentioned tubular container and, in operative **combination** with the second tubular container, means for controllably raising solid food through the open top...

...each, in respective open-topped tubular containers, each having its own controllable raising means, possibly **combined** with a tray and/or drink carton,

In order to allow maximum choice on the...the invention; Figure 14 is a perspective schematic pre-assembled view of four units which

**combine** to form container means embodying the invention; and Figures 15 to 19 schematically illustrate various...

...topped tubular container 14 adapted to be gripped upright in the hand and in operative **combination** therewith means 16 for controllably raising solid food 18 through the open top 20, see...dashed lines in Figure 1.

Alternatively, portion 60 may be much shorter, substantially vertical, and **inserted** in slot 64, Figure 14. Alternatively to rubber band 62, the top of strip 52...dot-dashed lines, food container 10 may comprise a second open-topped

tubular container 98 **combined** with the first-mentioned tubular container 14 and, in operative **combination** with the second tubular container 98, its own means 100 for controllably raising solid food...apparent to those skilled in the art that the features described may be modified and **combined** in various ways. Features used in one embodiment may be used in other embodiments with...

...features already there.

Invention is considered to reside in any new and unobvious features or **combinations** of features hereinbefore disclosed.

## CHAPTER 2 BACKGROUND

This invention relates to food containers and more...Alternatively, the (single) shell may be formed with slot means and strip material may be **inserted** through the slot means and then connected together into a loop. The loop serves for...

...pad as defined in Feature 43.

The features of the containers mentioned above may be **combined** in any useful manner with the features of Chapter L for example with a tray...

...the holder in the shop, and to avoid spillage. The invention extends to any other **combinations** of features indicated in the accompanying Features.

### DESCRIPTTON OF THE DRAWINGS

Reference will now be...from a roll in the same manner as material 146. A pad 160 may be **inserted** between member 176 at ears 184 and loop material 172, by hand, before stock 180...case with the embodiments of all of Figures 20 to 24) but has to be **inserted** through slots 192, 194 before it is **sealed** closed, e.g., at tab 124, There may also be provided a tray 200 for...very stable.

It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter and...

...for a canister) drink holder to be conveniently connected with the tray, so that the **combination** can be held in one hand either by holding the canister with the tray suspended...catch sauce and (usually liquid) droppings from food in the dispenser. The bag may be **sealed** with food in it and stored frozen and heated as a single article and then...

...dispenser may in turn be connected to the food holder. The canister may be sold **sealed** containing, for example, gasified soft drink or wine. The two trays may respectively hold a...depend from tray 222 or be used as a handle by which to hold the **combined** container 220 in one hand.

Tongue 230 is preferably formed as a projection of side...flat of the whole dispenser 272 by pushing together two diagonally opposite vertical edges thereof. Bag 280 and loop 274 are, for this purpose, **flexible** plastics sheet material such as PVC and outer member 278 is also of card.

Referring...wall 226.

It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter and...whole arrangement.

It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter, and...drinks, or with the food holders, e.g. bags of crisps, or may be pre- **combined** with either of these, or may be permanently **combined** with either of these.

According to another aspect of the invention, a food container is characterized in that it comprises a closed or **sealed** bag (e.g. a bag of crisps) containing food and having a loop to fit...

...round a liquid holder and a portion adapted to contain food and be closed or **sealed** therearound.

According to another aspect of the invention, a food container is characterised in that it comprises a drink holder and a closed or **sealed** bag containing food and having a loop by which it is attached to the drink may be **combined** with a water-dispersant. Alternatively, the adhesive portion may be replaced by a member that...

...canister;

Figure 43 is a similar view of another embodiment of the invention comprising

a **sealed** bag provided with a loop;

Figure 44 is a view as Figure 42 of a...attachment means 350 for attaching a food holder 352, which may for example be a **sealed** bag of crisps, to a drink holder 354, which may for example be a canister...by the shop assistant, e.g. with chips. Alternatively, as shown in Figure 43, a **sealed** bag 352 of e.g. crisps is provided with an integral loop 356 for fitting...

...pad 360 may be replaced by a suction disk 368. The bag 352 may be **sealed** at the top 364 or open in the manner of bag 352 shown in Figures ...in which it is appropriate for sandwich holder 370 to be made of a completely **flexible** material.

If an embodiment comprising a **bag** and loop as shown in Figure 42 or 44 is provided with a second loop...

...of a bag 352 in the manner shown in Figure 45, which bag may be **sealed** as shown in Figure 45 or open as shown in Figure 49 (but not having... similar functions. It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter and the earlier chapters, including **combinations** of features selected from different embodiments, and various modifications can be made, without departing from...within said portion, e.g. so as to be adapted to be folded down by **insertion** in said portion of a drink container. Again, said support means may depend from said...spacing means 406 which itself folds down about hinge line 408 under the action of **insertion** of a beaker 410 into ring-like portion 412. A tab 414 folds down, also...holder 430 to connect these together. The wide portions 432 of tab 426 are first **inserted** in the wide bottom portion of slot 428 and then the tab 426 is moved...

...450 and hinge lines 452, 454 but, as soon as a drink holder 410 is **inserted** into ring-like portion 448, the whole arrangement becomes fairly rigid and can be supported...

...respective slots 332. Separating the trays causes ring portion 448 to open suitably for - 36 **insertion** of beaker 410 therein. This can be done all in a single movement in a...

...and a handle in the shape of an oval ring 456 are hingedly connected together. **Insertion** of a beaker 410 into ring 412 ensures that ...soft drink. If the canister is taken from a refrigerator, it may be necessary to **wipe** it free of **moisture** on a piece of **cloth**, eg.

the jacket or trousers of the user. Alternatively, the adhesive may first be affixed...hook, and an adhesive for adhering the member to one article, for example a food **container**, e.g. a **bag** of crisps or **nuts**, whereby the hook or hook when produced may be used to hang that article to...layer 472 adhering to the bag. Then a canister 506 is taken from a refrigerator, **wiped** free of **moisture**, possibly by the customer on the side of his trousers, and the side of canister...necessarily differ. It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter and those accompanying the aforementioned prior chapters, including **combinations** of features selected from different embodiments, and various modifications can be made, without departing from...between them.

It will be clear to one skilled in the art that various useful

**combinations** can be selected from features of the various embodiments described in the present chapter and those accompanying the aforementioned prior chapters, including **combinations** of features selected from different embodiments, and various modifications can be made.

Any novel and inventive such **combinations** are to be considered as subject matter for corresponding independent claims.

## CHAPTER 9 BACKGROUND

This...the drawings and particularly Figure 84, a food container 10 comprises a longitudinally substantially rigid **sleeve** -like cover 12 open at the top end and comprising a flexible ejection-operating member ...

...Figures 92 and 93 show embodiments of a food container comprising a longitudinally substantially rigid **sleeve** -like cover 12 with a mechanism 22 (including a backed foam plastic adhesive 603 on...

...like article of food 34 from the cover 12, and comprising a tray 86 operatively **combined** with said cover 12 to enable the **combination** to be held in one hand, said cover 12 and said tray means 86 being...

...mutually substantially level at their base 620, 622, 624

### SUBSTITUTE SHEET

- 48 to enable the **combination** to be stood substantially upright on a level surface 626.

This applies also to the...ring 632.

It will be clear to one skilled in the art that various useful **combinations** can be selected from features of the various embodiments described in the present chapter and the aforementioned prior chapters, including **combinations** of features selected from different embodiments, and various modifications can be made. Any novel and inventive such **combinations** are to be considered as subject matter for corresponding independent claims.

## CHAPTER 10 BACKGROUND Improvements...

...to split it apart,

According to another aspect of the invention there is provided a **sleeve** -like food container having the features of Feature 139. This has the advantage that the...pieces of plastics sheet, 638, 6409 welded together along their common edge 642. When the **sleeve** 12 is flat (with corner 644 against side 646), the pieces 638, 640 are co...

...each other and are then split along path 656 so that a right-angled corner **pocket** is formed as a seal over the bottom of each flat dispenser blank 12. When these blanks are erected, as seen in Figure 94, this special shape of **pocket** allows the seal to cover the bottom mouth of dispenser 12 with a substantially flat...

...of the aforementioned embodiments or variations of these.

### IMPORTANT FEATURES INDIVIDUALLY AND IN ANY USEFUL **COMBINATIONS**

1. A food container, characterised in that it comprises a food dispenser which comprises an open-topped tubular container adapted to be gripped upright in the hand and in operative **combination** therewith means for controllably raising solid food through the open top.

2. A container as...to any one of Features 2 to 5, characterised in that said liquid container is **combined** with said loop.

20. A container as defined in any preceding Feature, characterised in

that...in any preceding Feature, characterised in that it comprises a second open-topped tubular container **combined** with the fast mentioned tubular container and, in operative **combination** with the second tubular container, means for controllably raising solid food through the open top

...

...as defined in any one of Features 26 to 29, characterised in that it is **combined** with food therein in an operative **combination** that facilitates eating the food from the container.

31. A food container, characterised in that...flat and the pad is hinged to the bottom of the shell member to facilitate **insertion** of the pad thereinto on erection of the container or assembly of the kit.

45...of parts to assemble into a food container, characterised in that it comprises any useful **combination** of features selected from two or more of Features 31 to 50.

52. A method of producing a kit of parts as defined in Feature 40, alone or in **combination** with Feature 41 or Feature 42, characterised in that said loop and member are formed...

...and formed mechanism and locks to said mechanism.

54. A method of manufacturing a food **container**, characterised in that a loop of **flexible** material is held open, movements are effected to locate a first tubular shell member within...before joining said parts together as aforesaid.

. A food container comprising a longitudinally substantially rigid **sleeve** -like cover open at one end, characterised in that it comprises a flexible ejection-operating a longitudinally substantially rigid **sleeve** -like cover with a mechanism for pushing out a solid-like article of food from...

...characterised in that it comprises a tray or other food- or drink-holding means operatively **combined** with said cover to enable the **combination** to be held in one hand, said cover and said means being adapted to be mutually substantially level at their base to enable the **combination** to be stood substantially upright -on a level surface.

- 62 129. A container as defined...means connected thereto for fixing to a food holder, e.g. a bag.

139. A **sleeve** -like food container that is flat, or erected from the flat, characterised in that it is **sealed** at one end by a double corner piece of **flexible** sealing material that is shaped to be flat when the **container** is flat and to rearrange itself to allow the container to be erected.

140. A...

...intersecting a vertical line of juxtaposition between two units of the container.

143. A food **container**, characterised in that it comprises an aforementioned loop portion of **flexible** plastics material, e.g. polythene, so that it can fit easily to a canister, e...in that it is the said attachment means and is or is adapted to be **combined** with a said liquid holder and a said food holder to attach these together.

154. A food container, characterised in that it comprises a closed or **sealed** bag (eg.

a bag of crisps) containing food and having a loop to fit around...

...round a liquid holder and a portion adapted to contain food and be closed or **sealed** therearound.

156. A food container, characterised in that it comprises a drink holder and a closed or **sealed** bag containing food and having a loop by which it is attached to the drink...hook, and an adhesive for adhering the member to one article, for example a food **container**, e.g. a **bag** of crisps or **nuts**, whereby the hook or hook when produced may be used to hang that article to...

Claim

... open-topped tubular container adapted to be gripped upright in the hand and in operative **combination** therewith means for controllably raising solid food through the open top.

3 Means as claimed...

...of said liquid upon operation of said raising means, e.g. said liquid container is **combined** with said loop.

5 Means as claimed in any one of claims 2 to 4...13 Food container means as claimed in claim 1, that comprises a longitudinally substantially rigid **sleeve** -like cover open at one end, characterised in that it comprises a flexible ejection-operating...

...17 Food container means as claimed in claim 1, that comprises a longitudinally substantially rigid **sleeve** -like cover with a mechanism for pushing out a solid-like article of food from...

...characterised in that it comprises a tray or other food- or drink-holding means operatively **combined** with said cover to enable the **combination** to be held in one hand, said cover and said means being adapted to be mutually substantially level at their base to enable the **combination** to be stood substantially upright on a level surface.

SUBSTITUTE SHEET

- 69

18 Food container...claimed in any one of claims 1 to 17, characterised in that it comprises a **combination** of interconnected food and/or drink holders, such that the **combination** is adapted to be held in one hand during selected consumption of the respective contents...

Set        Items        Description

S1        48240        SNACK?() FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-  
HEESE() CURL? ?

S2        191153        POTATO() CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK)() RIN-  
D? ? OR POTATOCHIP?

S3        351        (OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY)() FOO-  
D? ?

S4        5412        PC=20992

S5        1894894        SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA-  
CL? OR BOX OR BOXED OR BOXES

S6        4692        PC=(2641? OR 3070001)

S7        26561        WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-  
ANDY()WIPE? ? OR RAG OR RAGS

S8        4194416        NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -  
PAD OR PADS OR CLOTH OR CLOTHS

S9        59440        CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE-  
R? ?

S10        1719748        WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-  
T? OR DRENCH?

S11        690542        SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?

S12        535763        IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?

S13        2620777        SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -  
HYGEN?

S14        559624        ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-  
IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?

S15        490567        POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?

S16        388082        ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?)  
OR ENVELOPE? ?

S17        623428        INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR  
INSERTER? ?

S18        5538226        COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?

S19        2435093        MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR  
PLIANT OR MALLEAB? OR YIELDING

S20        6307        S1:S4(10N) (S5:S6)

S21        67822        S7:S9(10N) (S10:S14)

S22        6886227        S15:S18

S23        151817        S19(5N) (S5:S6)

S24        4        S20 AND S21 AND S22 AND S23

S25        14        S20 AND S7:S9 AND S10:S14 AND S22 AND S19

S26        0        S20A AND S7:S9 AND S10:S14 AND (S22 OR S19)

S27        41        S20 AND S7:S9 AND S10:S14 AND (S22 OR S19)

S28        41        S20(10N) (S7:S9)

S29        2        S28 AND S15:S18

S30        76        S24 OR S25 OR S27 OR S28 OR S29

S31        66        S30 AND PY<2002

S32        3        IDPAT (sorted in duplicate/non-duplicate order)

S33        1141619        S31 OR 32

S34        66        S31 OR S32

S35        44        RD (unique items)

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04642238 Supplier Number: 75201739

Hoping to wipe up moviewatchers.

Luhby, Tami

Newsday, pC2(1)

May 14, 2001

ISSN: 0278-5587

Language: English Record Type: Abstract

Document Type: Newspaper; Trade

ABSTRACT:

Unilever has teamed up with Screenvision Cinema Promotions for the inclusion of Unilever's Lever 2000 Antibacterial Moisturizing **Wipes** in **popcorn bags**. The direct marketing campaign would be implemented at Loews, United Artists and Regal movie theaters in New York City and Long Island. James Pardes, associate brand manager for Lever 2000, said the campaign aims to reach consumers when they need a disposal wipe the most.

COMMENTS: Unilever: Unilever has teamed up with Screenvision Cinema Promotions for the inclusion of Unilever's Lever 2000 Antibacterial Moisturizing Wipes in popcorn bags.

COMPANY NAMES: \*Unilever

EVENT NAMES: \*242 (Advertising); 613 (New orders received)

GEOGRAPHIC NAMES: \*1U2NY (New York)

PRODUCT NAMES: \*2297252 (Disposable Household Wipes); 7319500 (Direct Marketing Services)

INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)

NAICS CODES: 31323 (Nonwoven Fabric Mills); 54186 (Direct Mail Advertising)

SPECIAL FEATURES: COMPANY

ABSTRACT:

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35/9/33 (Item 1 from file: 18)  
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04642238 Supplier Number: 75201739

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PRODUCT NAMES: \*2297252 (Disposable Household Wipes); 7319500 (Direct Marketing Services)

INDUSTRY NAMES: BUS (Business, General); BUSN (Any type of business)

NAICS CODES: 31323 (Nonwoven Fabric Mills); 54186 (Direct Mail Advertising)

SPECIAL FEATURES: COMPANY

01905890 Supplier Number: 43183190

**Popcorn patent ruling applauded**

Des Moines Register (IA), pS10

July 29, 1992

Language: English Record Type: Abstract

Document Type: Newspaper; Trade

**ABSTRACT:**

Golden Valley Microwave Foods' patent on the plastic 'heater **pad**' in microwave **popcorn bags** has been ruled invalid by an Indiana judge. **Popcorn** companies had been paying the Minnesota company 1 cent per pay royalties. The federal judge ruled that Golden Valley deceived the US Patent Office, failing to tell one patent examiner that the company had already been turned down by another examiner who found 23 earlier patents. In addition, Golden Valley did not tell the government about a lawsuit with James River Corp and 'unlawfully claimed the James River heater **pad** technology as its own invention.' The heater **pad** used in **popcorn bags** is a rectangular piece of plastic about 4 inches wide that has a small amount of aluminum bonded to it. The strip has just enough metal to absorb heat instead of reflecting it, creating a frying-pan effect that heats oil and pops corn in the bag.

**COMMENTS:** Golden Valley Microwave: Plastic heater pad patent for microwave popcorn bags ruled invalid, IN

**COMPANY NAMES:** \*Golden Valley Microwave Foods Inc.

**EVENT NAMES:** \*370 (Patents & copyrights)

**GEOGRAPHIC NAMES:** \*1U3IN (Indiana)

**PRODUCT NAMES:** \*3073300 (Plated Plastics)

**INDUSTRY NAMES:** BUSN (Any type of business); REG (Business, Regional)

**NAICS CODES:** 32613 (Laminated Plastics Plate, Sheet, and Shape Manufacturing)

**TICKER SYMBOLS:** GVMF

**SPECIAL FEATURES:** COMPANY

**ABSTRACT:**

Golden Valley Microwave Foods' patent on the plastic 'heater **pad**' in microwave **popcorn bags** has been ruled invalid by an Indiana judge.

**Popcorn** companies had been paying the Minnesota company 1 cent per pay royalties. The federal judge...

...government about a lawsuit with James River Corp and 'unlawfully claimed the James River heater **pad** technology as its own invention.' The heater **pad** used in **popcorn bags** is a rectangular piece of plastic about 4 inches wide that has a small amount...

19920729

35/5, K/38 (Item 6 from file: 18)  
DIALOG(R)File 18:Gale Group F&S Index(R)  
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01055281 Supplier Number: 40550425  
**Jolly Time Microwave Popcorn**  
Lookout (Foods Edition), v0, n0, p203F  
Oct 24, 1988  
ISSN: 0740-3860  
Language: English Record Type: Abstract  
Document Type: Magazine/Journal; Trade

**ABSTRACT:**

American Pop Corn (Sioux City, IA) has introduced Jolly Time Microwave Popcorn. Jolly Time Microwave Popcorn is a new Cheddar cheese flavored popping corn that flavors while it pops; the Cheddar cheese is right in the bag. The microwave popcorn segment has been the driving force for the increase in supermarket sales of popcorn by 26% in 1987 to \$454 mil. The microwave segment's market leader is Beatrice/Hunt-Wesson's Orville Redenbacher, which has a 30% market share. Jolly Time Microwave Popcorn is an easier-to-prepare and **cleaner** product (the **popcorn** is contained and popped in the same **package** ) than conventional **popcorn** ; both of those features have been strong contributors to the market's growth.  
for complete 3-page illustrated text (\$25) and subscription and produce sample information contact Marketing Intelligence Service Ltd., 33 Academy Street, Naples, NY 14512, Tel. (716)374-6326.

COMMENTS: American Pop Corn: Has introduced Jolly Time Microwave Popcorn  
COMPANY NAMES: \*American Pop Corn Co.

EVENT NAMES: \*330 (Product information)

GEOGRAPHIC NAMES: \*1USA (United States)

PRODUCT NAMES: \*2099980 (Popcorn (Unpopped))

INDUSTRY NAMES: BUSN (Any type of business); FOOD (Food, Beverages and Nutrition)

NAICS CODES: 11115 (Corn Farming)

TRADE NAMES: Jolly Time Microwave Popcorn

SPECIAL FEATURES: COMPANY

ADVERTISING CODES: 57 New Products/Services

**ABSTRACT:**

...has a 30% market share. Jolly Time Microwave Popcorn is an easier-to-prepare and **cleaner** product (the **popcorn** is contained and popped in the same **package** ) than conventional **popcorn** ; both of those features have been strong contributors to the market's growth.  
for complete...

19881024

Set        Items        Description

S1        48240        SNACK?() FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-  
      HEESE() CURL? ?

S2        191153        POTATO() CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK) () RIN-  
      D? ? OR POTATOCHIP?

S3        351        (OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY) () FOO-  
      D? ?

S4        5412        PC=20992

S5        1894894        SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTA-  
      CL? OR BOX OR BOXED OR BOXES

S6        4692        PC=(2641? OR 3070001)

S7        26561        WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-  
      ANDY()WIPE? ? OR RAG OR RAGS

S8        4194416        NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -  
      PAD OR PADS OR CLOTH OR CLOTHS

S9        59440        CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE-  
      R? ?

S10        1719748        WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-  
      T? OR DRENCH?

S11        690542        SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?

S12        535763        IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?

S13        2620777        SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -  
      HYGEN?

S14        559624        ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-  
      IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?

S15        490567        POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?

S16        388082        ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?)  
      OR ENVELOPE? ?

S17        623428        INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR  
      INSERTER? ?

S18        5538226        COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?

S19        2435093        MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR  
      PLIANT OR MALLEAB? OR YIELDING

S20        6307        S1:S4 (10N) (S5:S6)

S21        67822        S7:S9 (10N) (S10:S14)

S22        6886227        S15:S18

S23        151817        S19(5N) (S5:S6)

S24        4        S20 AND S21 AND S22 AND S23

S25        14        S20 AND S7:S9 AND S10:S14 AND S22 AND S19

S26        0        S20A AND S7:S9 AND S10:S14 AND (S22 OR S19)

S27        41        S20 AND S7:S9 AND S10:S14 AND (S22 OR S19)

S28        41        S20 (10N) (S7:S9)

S29        2        S28 AND S15:S18

S30        76        S24 OR S25 OR S27 OR S28 OR S29

S31        66        S30 AND PY<2002

S32        3        IDPAT (sorted in duplicate/non-duplicate order)

S33        1141619        S31 OR 32

S34        66        S31 OR S32

S35        44        RD (unique items)

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Set	Items	Description
S1	9378	SNACK? () FOOD? ? OR SNACKFOOD? OR POPCORN? OR PRETZEL? OR C-HEESE() CURL? ?
S2	27641	POTATO()CHIP? ? OR NUTS OR PEANUT? OR (BACON OR PORK)()RIN-D? ? OR POTATOCHIP?
S3	127	(OILY OR GUMMY OR MESSY OR STICKY OR GUNKY OR GREASY) ()FOOD? ?
S4	663	PC=20992
S5	353422	SACK? ? OR BAG OR BAGS OR PACKAG? OR CONTAINER? OR RECEPTAC-CL? OR BOX OR BOXED OR BOXES
S6	375	PC=(2641? OR 3070001)
S7	25985	WIPE? ? OR HANDIWIPE? OR HANDI()WIPE? ? OR HANDYWIPE? OR H-ANDY()WIPE? ? OR RAG OR RAGS
S8	109178	NAPKIN? OR TOWEL? ? OR TOWELET? OR TISSUE? OR KLEENEX? OR -PAD OR PADS OR CLOTH OR CLOTHS
S9	18172	CLEANER? ? OR SANITI?ER? OR CLEANSER? ? OR CLEANING()MEMBE-R? ?
S10	67427	WET OR WETTED OR WETTENED OR MOIST? OR PREMOIST? OR SATURA-T? OR DRENCH?
S11	51907	SODDEN OR DAMP OR DAMPEN? OR SOAK? OR INFUS?
S12	17621	IMPREGNAT? OR HYDRAT? OR PERMEAT? OR HUMECT?
S13	87326	SOIL OR SOILS OR SOILED OR SOILING OR DIRTY OR HYGIEN? OR -HYGEN?
S14	4248	ANTIBACTER? OR ANTI()BACTER? OR BIOCID? OR BIO() (CIDE OR C-IDES OR CIDAL) OR ANTIMICROB? OR ANTI()MICROB?
S15	75601	POUCH? OR SLEEVE? OR POCKET? OR COMPARTMENT?
S16	40796	ENCLOSUR? OR SEALED OR ADDITIONAL() (LAYER? ? OR PORTION? ?) OR ENVELOPE? ?
S17	38326	INSERT OR INSERTS OR INSERTED OR INSERTING OR INSERTION OR INSERTER? ?
S18	357557	COMBINE? OR COMBINAT? OR COMBINING OR INCORPORAT?
S19	160194	MYLAR OR PLASTIC OR CELLOPHAN? OR FLEXIBLE OR FLEXIBIL? OR PLIANT OR MALLEAB? OR YIELDING
S20	728	S1:S4 AND S5:S6 AND S7:S9 AND S10:S14 AND S15:S18 AND S19
S21	101	S1:S4(10N)S5:S6 AND S7:S9 AND S10:S14 AND S15:S18 AND S19
S22	392	(S1:S4(10N)S5:S6) AND S7:S9
S23	262	S22 AND S15:S18
S24	193	S23 AND (S10:S14 OR S19)
S25	101	S23 AND S10:S14 AND S19
S26	368012	25 OR S21
S27	101	S25 OR S21
S28	78	S27 AND PY<2002
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